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NATIONAL ENERGY BOARD



ANNUAL REPORT

1991

NATIONAL ENERGY BOARD

1991

31 March 1992



The Honourable Jake Epp, P.C., M.P.
Minister of Energy, Mines and Resources
Ottawa, Ontario

Dear Mr. Epp,

I am pleased to submit the Annual Report of the National Energy Board for the year ending 31 December 1991 in accordance with the provisions of section 133 of the National Energy Board Act, R.S.C. 1985, c. N-7.

Yours sincerely,

A handwritten signature in black ink, appearing to read "R. Priddle".

R. Priddle,
Chairman

National Energy Board Profile

The National Energy Board is an independent federal regulatory tribunal that was created by an Act of Parliament on 2 November 1959. Since its creation, the Board has played an important role in the development of Canada's energy sector.

The Board's regulatory powers under the *National Energy Board Act* include the granting of authorizations for the exportation of oil, natural gas and electricity, the certification of interprovincial and international pipelines and designated interprovincial and international power lines, and the setting of tolls and tariffs for oil and gas pipelines under federal jurisdiction.

The Act also requires that the Board keep under review the Canadian supply of all major energy commodities, with emphasis on electricity, oil, natural gas, and the by-products derived from oil and natural gas, as well as the demand for Canadian energy in Canada and in export markets.

The Board has specific responsibilities under the *Northern Pipeline Act* and the *Energy Administration Act*. In addition, Board inspectors have been appointed safety officers by the Minister of Labour to administer *Part II* of the *Canada Labour Code*.

In April 1991, regulatory responsibilities of the Canada Oil and Gas Lands Administration for oil and gas exploration and development in frontier lands were transferred to the Board.

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Certain information usually provided in past Annual Reports on the supply of and demand for oil, natural gas and electricity (under the heading of "Energy Developments" and also in certain Appendices) will be published separately at a later date.

Chairman's Letter 1991

The National Energy Board (the "Board") exists to serve the public interest of Canada. We do this through the provision of regulation which is directly relevant to the needs of our time, whilst at the same time anticipating and actively preparing for future needs.

Some of the Board's major areas of activity include:

- Certifying, in the public interest, international and interprovincial pipelines and international power lines;
- Protecting the environment during pipeline construction and subsequent operation;
- Ensuring the safety of oil and gas pipelines;
- Regulating the tolls of - and access to - pipelines which occupy monopoly positions in the marketplace;
- Licensing long-term exports of oil and gas which are found surplus to Canada's reasonably foreseeable requirements; and
- Permitting electricity exports over international power lines, having regard to their extra-provincial effects and to their impact on the environment.

In addition the Board has advisory functions, mainly related to keeping under review energy matters over which Parliament has jurisdiction and providing the Minister of Energy, Mines and Resources and other Departments with studies, reports and briefings. As part of its ongoing energy industry advisory function, the Board from time to time publishes baseline energy studies, such as its biennial *Canadian Energy Supply and Demand 1990-2010* report released in September 1991.

Responsibility for the Board's decision-taking rests with its Members. The *National Energy Board Act* provides for up to nine Members and up to six Temporary Members. As at year-end, the Board numbered eight Members and one Temporary Member; David B. Smith, Temporary Member, retired on September 21 and Martha Musgrove, Member, resigned effective October 1. Both had served the Board well and made important contributions to its work.

During 1991 the Board considered a wide variety of energy regulatory matters, ranging from electricity exports from New Brunswick to gas pipeline construction in northern British Columbia and including a report made at the Minister's request on the future utilisation of the Sarnia-Montreal oil pipeline. It held eight oral public hearings and sat for a total of fifty hearing days in five different locations across the country. The Board also dealt with hundreds of applications which it is authorized to handle without public hearing.

In late February the Government announced its intention to relocate the Board from Ottawa to Calgary. The Board's *Act* was subsequently amended to provide that its head office shall be in Calgary, Alberta, and that Members shall reside in, or within a reasonable commuting distance of, Calgary. The Board started operations in Calgary on September 3, 1991 and its new headquarters were officially opened on November 1.

In March the Government announced that oil and gas regulation in the North, formerly carried out by the Canada Oil and Gas Lands Administration ("COGLA"), would in future be the Board's responsibility upon enactment of necessary legislative changes.

At the beginning of the year, the Board's staff numbered some 320, plus another 55 who were at that time COGLA personnel. Regrettably, many valued employees were unable to move with the Board to Calgary. By year-end, the great majority had found other employment, generally in the Public Service in Ottawa. Fortunately, the Board was able to retain a "critical mass" of experienced staff after the move and by the end of the 1991/92 fiscal year we expect to have successfully recruited skilled replacements for nearly all open positions.

The COGLA merger brought to the Board additional environmental competence and responsibility. It has used the opportunity to create an Environment Directorate which has equal status with Directorates dealing with, for example, Pipeline Regulation and Energy Regulation. This reflects the importance which the Board attaches to its environmental protection roles.

Understandably, some disruption has been caused by the Board's relocation. In operational terms, we lost about two months' hearing time, resuming our fall hearing schedule in mid-November rather than in mid-September. However, the Board's weekly meetings and decision-taking continued without interruption.

I am very appreciative of the efforts made by Board Members and staff to maintain our operations while at the same time coping with the personal and work-place stresses and disruption which must inevitably accompany such a major move. I would also like to place on record our gratitude for the advice and assistance we received from federal government departments and agencies and from the Calgary community in effecting the move in such a short space of time and at least cost.

At year-end, the Board was settling into its new Calgary home and vigorously attacking an ambitious schedule involving - among other things - ten oral public hearings between November 1991 and May 1992, as well as four ongoing written proceedings.

The Board has always been conscious of its national character. It will function in Calgary with the same authority, independence and fairness as it did in Ottawa.

The Board is aware too that it must maintain a comprehensive understanding of all energy matters and interests. It will do so while discharging appropriately its regulatory and advisory responsibilities.

Finally, the Board is committed to serving the Canadian public effectively, but with due regard to economy and efficiency, and of course in both official languages.

A handwritten signature in black ink, appearing to read 'R. Priddle'. The signature is fluid and cursive, with the first letter 'R' being particularly large and stylized.

R. Priddle

The Year at a Glance

Highlights of Major Activities during 1991

Hearings

During 1991 the Board...

- conducted eight oral public hearings for a total of fifty hearing days.
- conducted four public hearings by way of written submission.

Natural Gas

During 1991 the Board...

- issued 16 natural gas export licences for a total of some 52.7 billion cubic metres (1.86 trillion cubic feet). The licences were issued to:

Canadian Occidental Petroleum Limited
Dartmouth Power Associates, Limited Partnership
Encogen Four Partners, Limited Partnership
Esso Resources Canada Limited
FSC Resources Limited
Fulton Cogeneration Associates
Indeck Gas Supply Corporation - Indeck-Corinth
Indeck Gas Supply Corporation - Indeck-Ilion
Kamine/Besicorp Carthage, Limited Partnership
Kamine/Besicorp South Glens Falls, Limited Partnership
New England Power Company
Pawtucket Power Associates, Limited Partnership
ProGas Limited
Selkirk Cogen Partners, Limited Partnership
Unigas Corporation
Western Gas Marketing Limited.

- approved amendments to 14 existing gas export licences.
- issued 107 short-term orders either for the export, the import or the transit movement of natural gas.
- issued 50 orders for the export of propane and 42 orders for the export of butanes.

- decided to conduct a review on two of the components (the Complaints Procedure and the Other Public Interest Considerations) of the Market-Based Procedure as part of the Board's ongoing efforts to maintain and improve the clarity and effectiveness of its regulatory process.
- amended the procedures for natural gas exports and import by order.

Oil

During 1991 the Board...

- issued 122 orders for the export of crude oil and petroleum products.
- published a report entitled *Exports of Petroleum Products in 1990*.

Electricity

During 1991 the Board...

- issued six permits to **The New Brunswick Electric Power Commission** which will allow the utility to continue exporting firm and interruptible electricity to Maine, firm electricity to Massachusetts and firm electricity wheeled through Maine and returned to New Brunswick.
- issued five permits to **Ontario Hydro** which will allow the utility to continue exporting firm and interruptible electricity to **Consumers Power Company, The Detroit Edison Company, Niagara Mohawk Power Corporation, The Power Authority of the State of New York, the New York Power Pool, Minnesota Power and Light Company, General Public Utilities Corporation** and the **State of Vermont**.
- commenced the examination of an application by the **British Columbia Hydro and Power Authority** and the **British Columbia Power Exchange Corporation** for permits to export electricity to the **Bonneville Power Administration** and to other potential customers who are members of the **Western System Coordinating Council** and the **Northwest Power Pool**.
- commenced the examination of an application by the **Manitoba Hydro-Electric Board** for three permits to export electricity to **Northern States Power Company** and **United Power Association in Minnesota**.
- amended 4 export licences, one order, three permits and one international power line certificate.
- issued a further 6 export permits, to make a total of 17 issued.
- continued its study on interprovincial electricity trade.

Pipelines

During 1991 the Board...

- approved a \$1.8 billion expansion of the **TransCanada PipeLines Limited** system, comprising 1 190 kilometres of looping and pipeline and 17 compressor units.
- granted a certificate to **Westcoast Energy Inc.** to construct the 48-kilometre Adsett pipeline at an estimated cost of \$8.3 million.
- denied an application by **TransCanada PipeLines Limited** to construct a pipeline extension known as the "Gananoque Extension".
- denied an application by **TransCanada PipeLines Limited** to construct a pipeline extension known as the "Blackhorse Extension".
- approved an application by **Interprovincial Pipe Line Company** to construct underground facilities for natural gas liquids near its existing terminal in Edmonton, Alberta, but denied the toll methodology requested.
- held a hearing on an application by **TransCanada PipeLines Limited** to construct 301 kilometres of pipeline looping as well as the relocation of three portable compressor units at an estimated cost of \$389 million.
- commenced a hearing, by means of written submissions, on an application by **Alberta Natural Gas Ltd.** to expand its system by adding and modifying the compression facilities on the company's three existing compressor stations in southern British Columbia.

Toll Regulation

During 1991 the Board...

- established new tolls that **TransCanada PipeLines Limited** may charge for the transportation of natural gas at 15.97 % higher than the average 1989 tolls, effective 1 January 1991.
- approved an 8 % increase in the tolls that **Interprovincial Pipe Line Company** may charge for transporting crude oil, natural gas liquids and petroleum products beginning 1 January 1991.
- approved a 9.8 % increase in the tolls that **Trans-Northern Pipelines Inc.** may charge for the transportation of refined petroleum products beginning 1 December 1990.
- approved a 6.4 % average increase in the tolls that **Trans Mountain Pipe Line Company Ltd.** may charge for the transportation of oil and petroleum products beginning 1 January 1991.

- approved a 7.2 % increase in tolls, effective 1 January 1991, and a 3 % increase in tolls, effective 1 January 1992, that **Trans Québec & Maritimes Pipeline Inc.** may charge for the transportation of natural gas.
- approved a new tariff that will be used by **Alberta Natural Gas Ltd.** that will ensure that prospective and existing shippers are given fair and equitable access to the company's transportation service.
- approved **Westcoast Energy Inc.'s** queuing procedures.
- issued new orders to **Interprovincial Pipe Line Company, Trans Mountain Pipe Line Company Ltd.** and **Trans-Northern Pipelines Inc.** amending the procedures under which their toll applications will be processed by the Board.
- commenced a hearing on an application by **Interprovincial Pipe Line Company** to increase the tolls it may charge, beginning 1 January 1992, for transporting crude oil, natural gas liquids and petroleum products.

Environment

During 1991 the Board...

- in accordance with the *Environmental Assessment and Review Process Guidelines Order*, conducted environmental screenings of eighteen natural gas and electricity export applications and at year-end was considering the environmental impact of five additional export applications.
- conducted over 82 environmental screenings of pipeline facilities, ranging from facility modifications to major pipeline looping and transmission facilities.
- carried out periodic environmental inspections of the construction of **TransCanada PipeLines Limited's** 1991 looping projects across Canada and **Westcoast Energy Inc.'s** pipeline construction in northeastern British Columbia.
- conducted periodic inspections of 10 operational pipeline systems in eastern Canada to ensure that rights-of-way were being maintained in an environmentally acceptable manner.
- conducted periodic inspections of 4 polychlorinated biphenyl (PCB) waste storage sites to insure that the sites were in compliance with the federal *Interim Order Respecting the Storage of Wastes Containing Chlorobiphenyls*.
- distributed approximately 2 500 English and 900 French copies of the Board's revised guide to *Excavation and Construction Near Pipelines* (published in March 1991) to pipeline companies, contractors, utility owners, technicians, consultants and other interested third parties.

Advisory Functions

- The Board conducted a study, at the request of the Minister of Energy, Mines and Resources, on the future use of **Interprovincial Pipe Line Company's** Sarnia to Montreal pipeline.

Energy Studies

- The Board issued a report entitled *Canadian Energy Supply and Demand, 1990-2010*.

Legislation and Regulations

- *Cost Recovery Regulations* became effective on 1 January 1991.
- The *National Energy Board Act* was amended to implement the relocation of the Board's Head Office to Calgary, Alberta.
- The *National Energy Board Part VI Regulations* (the Part VI Regulations) are being amended to reflect the new *Canadian Electricity Policy* and the Market-Based Procedure for considering gas export licence applications.
- The process of creating and amending regulations pertaining to frontier oil and gas activities, as provided for under *Oil and Gas Production and Conservation Act*, continues with the Board.

Legal Actions

- In October and December 1990, **Hydro-Québec, le Procureur général du Québec** and the **General Council of the Crees (of Quebec)** filed with the Federal Court of Appeal applications for leave to appeal certain aspects of the Board's decision to issue licences to Hydro-Québec for exports of firm electricity to the **Vermont Joint Owners** and the **New York Power Authority**. In July the court denied the Crees' appeal and allowed the appeals by **le Procureur général** and **Hydro-Québec**. In October, the **Crees** and the **Cree Regional Authority** filed an application for leave to appeal with the Supreme Court of Canada.
- In January, the **Treaty 8 Tribal Association** and the **Doig River Indian Band** filed with the Federal Court of Appeal an application for leave to appeal the Board's decision to approve an application by **Canadian Hunter Exploration Ltd.** to construct three segments of interprovincial pipeline spanning the British Columbia/Alberta border. In May the Court granted the leave to appeal and the appeal is expected to be heard in early 1992.

- In March, **Trans-Northern Pipelines Inc.** filed an application with the Federal Court of Appeal for leave to appeal the Board's decision affirming Order MO-22-89 which ordered **Trans-Northern** to relocate a section of pipeline located under the St. Eustache Mall. In May, the Court heard the motion orally and dismissed the application on the same day.
- In April, **Niagara Mohawk Power Corporation** and **Western Gas Marketing Limited/TransCanada PipeLines Limited** filed a notice with the Federal Court of Appeal seeking an order granting them leave to file an application for leave to appeal 30 days following the release of the Board's Reasons for Decision on the Gananoque Extension. In January and February 1992 **TransCanada**, **Western Gas** and **Niagara Mohawk** withdrew their motions
- In June, **Altamont Gas Transmission Company** filed an application in the Federal Court Trial Division to quash a February decision of the Board and the Designated Officer of the Northern Pipeline Agency in which it was determined that a certain application by **Foothills Pipelines Ltd.** with the Northern Pipeline Agency was properly before the Agency and quashing a decision of the Board amending condition 12 of Schedule III of the *Northern Pipeline Act*. In December **Altamont** withdrew its application with the Court.
- In June, the **Prophet River Indian Band** filed an application with the Federal Court of Appeal for leave to appeal a May decision of the Board denying an application by the **Band** to review the Board's decision regarding an Environmental Screening Document prepared with respect to **Westcoast Energy Inc.'s** Adsett pipeline.
- In August, **CNG Transmission Corporation** filed a motion with the Federal Court Trial Division seeking leave to appeal the Board's August decision to review its decision to deny the Blackhorse Extension. In October, the Court ordered that the Board discontinue its review and that Messrs. Priddle and Fredette refrain from participating in any subsequent review that might be conducted regarding the Blackhorse decision.

Organization and Administration

- On 26 February 1991 the Government announced the relocation of the Board to Calgary.
- On 2 April 1991 approximately 55 staff members of the Canada Oil and Gas Lands Administration were transferred to the Board.

- A new Environment Directorate was established at the Board, combining all functions and responsibilities of the Environmental Branch of the National Energy Board and those of the Environmental Protection Branch of the Canada Oil and Gas Lands Administration. These responsibilities arise out of the *National Energy Board Act*, the *Oil and Gas Production and Conservation Act*, and the *Canadian Petroleum Resources Act*.
- The Board relocated from Ottawa to Calgary, with the new Calgary Head Office commencing full operation on 3 September.

Table 1
**Highlights of the Pipeline Companies
Under National Energy Board Jurisdiction**

	1991 Rate Base ^(a) (\$000,000)	1991 Revenue Requirement (\$000,000)	Length (Including Loops) (km)	1991 Actual Throughput (10 ⁶ m ³)
Group 1 Gas(b)				
Alberta Natural Gas Company Ltd.	27	28	175	14,528
Foothills Pipe Lines Ltd.	697	168	850	12,946
Trans Québec & Maritimes Pipeline Inc.	346	74	341	3,025
TransCanada PipeLines Limited	3,689	1,224	11,369	45,413
Westcoast Energy Inc.	902	304	4,554	13,512
Group 1 Oil				(10³m³)
Cochin Pipe Lines Ltd.	42	30	1,125	4,166
Interprovincial Pipe Line Inc.	654	313	6,495	77,067
Interprovincial Pipe Line (NW) Ltd.	278	73	868	1,940
Trans Mountain Pipe Line Company Ltd.	163	88	1,328	10,633
Trans-Northern Pipelines Inc.	30	29	847	9,546
Group 2 Gas and Oil				
Total	N/A	N/A	3,666	N/A

(a) Net plant or equivalent, including working capital.

(b) Group 1 consists of the ten major pipeline companies, for which financial data are based on preliminary estimates obtained from those companies. Group 2 is comprised of the remaining 43 smaller pipeline companies which are regulated on a complaint basis only and for which financial data are not available.

Board Activities

Hearings, Inquiries and Reviews

During 1991, the Board conducted eight oral hearings in locations such as Vancouver, Fort Nelson, Calgary, Niagara Falls and Ottawa for a total of fifty hearing days. The Board also conducted four hearings by way of written submissions.

This section summarizes the major matters dealt with in 1991 following public hearings, inquiries and reviews for which decisions have been issued or are still pending.

Natural Gas Exports

Gas Export Applications Approved as Part of the GH-5-89 Hearing

During the GH-5-89 hearing, the Board considered 15 applications for natural gas export licences. In April 1991 the Board approved the following exports:

Canadian Occidental Petroleum Limited was issued a licence to export some 433 400 cubic metres (15.3 million cubic feet) of natural gas per day at Niagara Falls, Ontario for the period ending 31 October 2006. The gas will be used to fuel a cogeneration facility to be located near Old Bethage, New York.

Encogen Four Partners, Limited Partnership was issued a licence to export some 424 900 cubic metres (15 million cubic feet) of natural gas per day at Niagara Falls, Ontario for a period of 15 years. The gas will be used to fuel a cogeneration facility to be located in Buffalo, New York.

Esso Resources Canada Limited was issued a licence to export some 991 500 cubic metres (35 million cubic feet) of natural gas per day at Iroquois, Ontario for the period ending 31 October 2006. The gas will be used as system supply by the **Boston Gas Company** for use by its customers in The City of Boston and 73 other cities and towns in eastern Massachusetts.

FSC Resources Limited was issued a licence to export some 453 000 cubic metres (16 million cubic feet) of natural gas per day at Niagara Falls, Ontario for the period ending 31 October 2006. The gas will be used to fuel a cogeneration facility to be located in north east Pennsylvania.

Fulton Cogeneration Associates was issued a licence to export some 326 200 cubic metres (11.5 million cubic feet) of natural gas per day for the period 1 November 1991 to 31 October 2001, then to export some 160 000 cubic metres

(5.7 million cubic feet) of gas per day for the period 1 November 2001 to 31 October 2005. The exports would be made at Chippawa, Ontario. The gas will be used to fuel a cogeneration facility to be located in Fulton, New York.

Indeck Gas Supply Corporation was issued two licences to export natural gas. The first licence authorizes **Indeck** to export some 459 000 cubic metres (16.3 million cubic feet) of natural gas per day commencing on first deliveries and continuing for 15 years. The gas will be used to fuel a cogeneration facility to be located in Corinth, New York. The second licence authorizes **Indeck** to export some 210 000 cubic metres (7.5 million cubic feet) of natural gas per day commencing on first deliveries and continuing for 15 years. The gas will be used to fuel a cogeneration facility to be located in Ilion, New York. For both licences, the exports would be made at Chippawa, Ontario.

Kamine/Besicorp Carthage, Limited Partnership was issued a licence to export some 402 250 cubic metres (14.2 million cubic feet) of natural gas per day at Iroquois, Ontario for the period ending 31 October 2006. The gas will be used to fuel a cogeneration facility to be located in Carthage, New York.

Kamine/Besicorp South Glens Falls, Limited Partnership was issued a licence to export some 402 250 cubic metres (14.2 million cubic feet) of natural gas per day at Iroquois, Ontario for the period ending 31 October 2006. The gas will be used to fuel a cogeneration facility to be located in South Glens Falls, New York.

New England Power Company was issued a licence to export some 1 700 000 cubic metres (60 million cubic feet) of natural gas per day at Iroquois, Ontario commencing on first deliveries and continuing for 15 years. The gas will be used by **New England Power Company** and its affiliates to generate electricity. In particular, it will displace fuel oil currently being burned at the Brayton Point Station in Somerset, Massachusetts and it will be used to fuel three electric power generation units in Providence, Rhode Island.

Pawtucket Power Associates, Limited Partnership was issued a licence to export some 362 000 cubic metres (12.8 million cubic feet) of natural gas per day at Iroquois, Ontario for the period ending 31 October 2006. The gas will be used to fuel a cogeneration facility to be located near Pawtucket, Rhode Island.

ProGas Limited was issued a licence to export some 708 200 cubic metres (25 million cubic feet) of natural gas per day at Iroquois, Ontario commencing on first deliveries and continuing for 15 years. The gas will be used to fuel a cogeneration facility to be located at Springfield, Massachusetts.

Selkirk Cogen Partners, Limited Partnership was issued a licence to export some 651 500 cubic metres (23 million cubic feet) of natural gas per day at Iroquois, Ontario for the period commencing on first deliveries and continuing for 15 years and 9 months. The gas will be used to fuel a cogeneration facility to be located in Selkirk, New York.

Unigas Corporation was issued a licence to export some 453 200 cubic metres (16 million cubic feet) of natural gas per day at Chippawa, Ontario commencing on first deliveries and continuing for 10 years. The gas will be used as system supply by **Rochester Gas and Electric Corporation**, which is a gas distribution company and electric utility serving Rochester and surrounding counties in western New York State.

Western Gas Marketing Limited was issued a licence to export some 283 200 cubic metres (10 million cubic feet) of natural gas per day at Niagara Falls, Ontario commencing on first deliveries and continuing for 15 years. The gas will be used as system supply by the **Elizabethtown Gas Company**, which is a local distribution company serving customers in central and northwestern New Jersey.

(For more information refer to **TransCanada PipeLines Limited - 1991/1992 Facilities and Associated Gas Export Licences - GH-5-89** on page 25 in the *Pipeline Facilities* Section)

Esso Resources Canada Ltd.; Gulf Canada Resources Ltd.; Shell Canada Limited - Licences - GH-10-88

In October 1989, the Board issued licences to **Esso**, **Gulf** and **Shell** to export natural gas from the Mackenzie Delta.

On 8 February 1990, the Minister of Energy, Mines and Resources requested clarification on how the Board complied or would comply with the *Environmental Assessment and Review Process Guidelines Order* in arriving at its decision to issue the licences to **Esso**, **Gulf** and **Shell**. In compliance with the *EARP Guidelines Order*, the Board decided to conduct an environmental screening of the applications and held a hearing by way of written submission. On 15 February 1990 the Board issued Hearing Order GHW-2-90, inviting interested parties to provide their comments.

Various submissions were received and are currently under review. The Board expects to issue its decision on this matter in 1992.

Dartmouth Power Associates Limited Partnership - Natural Gas Export - GH-9-90

The Board approved an application by **Dartmouth Power** for a licence to export 400 900 cubic metres (11.4 million cubic feet) of natural gas per day near Iroquois, Ontario over a 15-year period beginning 1 November 1992. The gas will be used to fuel a new gas-fired independent power generating facility in Dartmouth, Massachusetts.

Dartmouth had requested a 20-year licence to export some 2.9 billion cubic metres (103.4 billion cubic feet) of natural gas. The Board approved the licence

for 15 years for some 2.2 billion cubic metres (77.5 billion cubic feet) instead of 20 years because it was not satisfied that the evidence submitted by **Dartmouth** with regard to supply and the commercial necessity for the applied-for licence term was adequate to support the issuance of a 20-year export licence.

The Board held a public hearing on 19 and 20 February 1991 in Ottawa to consider the application.

The Board also conducted an environmental screening of the application.

L&J Energy Systems, Inc. - Amendment to Licence GL-148 - GH-2-91

The Board approved an application from **L&J Energy** to amend its natural gas export Licence GL-148 so as to extend the termination date by three years and to increase the term quantity from 1 456 million cubic metres (51.4 billion cubic feet) to 1 815 million cubic metres (64.1 billion cubic feet).

The application was considered at a public hearing held in Ottawa on 7 May 1991.

The Board also conducted an environmental screening of the application.

Various Applications for Gas Export Licences - GH-3-91

The Board held a public hearing on 25, 26 and 27 June 1991 in Calgary on applications from various companies for licences to export natural gas.

The applications received were from:

Amoco Canada Petroleum Company Ltd.
Canadian Occidental Petroleum Ltd.
Mobil Oil Canada, Ltd.
North Canadian Marketing Inc. and East Georgia Cogeneration
(Vermont) Limited Partnership
ProGas Limited
Shell Canada Limited
Unigas Corporation
Western Gas Marketing Limited
Western Gas Marketing Limited, as agent for Northern Minnesota
Utilities, a Division of Utilicorp United Inc.

Amoco requested a licence to export 424 900 cubic metres (15.0 million cubic feet) of natural gas per day to **Northern States Power Company**, Wisconsin from 1 November 1992 to 31 October 2002. **Northern States** serves markets in western Wisconsin and the upper peninsula of Michigan.

Canadian Occidental requested a licence to export 212 500 cubic metres (7.5 million cubic feet) of natural gas per day to **Northern States** from 1 November 1992 to 31 October 2002.

Mobil requested a licence to export 563 500 cubic metres (20 million cubic feet) of natural gas per day to **Northern Natural Gas Company, a Division of Enron Corp** from the date of Governor in Council approval to 31 October 2000. **Northern Natural** is an interstate pipeline company serving primarily local distribution companies in Illinois, Iowa, Michigan, Minnesota, South Dakota and Wisconsin.

North Canadian/East Georgia Cogeneration requested a licence to export 192 500 cubic metres (6.8 million cubic feet) of natural gas per day from 1 November 1992 to 31 October 2012. The gas would be used by **East Georgia Cogeneration** in a cogeneration plant to be constructed in East Georgia, Vermont.

ProGas filed two applications for licences to export natural gas to the United States. One application was for a licence to export 339 900 cubic metres (12.0 million cubic feet) of natural gas per day to **Lockport Energy Associates, L.P.** from 1 November 1992 to 31 October 2007. The gas will be used by **Lockport** at a cogeneration facility to be constructed in Lockport, New York. The other application was for a licence to export 212 500 cubic metres (7.5 million cubic feet) of natural gas per day to **Northern States** from 1 November 1992 to 31 October 2002.

Shell applied for two 15-year licences to export natural gas to the U.S. Midwest from 1 November 1991 to 31 October 2006. The first licence requested was for the export of 580 700 cubic metres (20.5 million cubic feet) of natural gas per day to **Salmon Resources Ltd.** for resale to **Midwest Gas, A Division of Iowa Public Service Company**. **Midwest Gas** is a natural gas utility serving customers in Minnesota, Iowa, South Dakota and Nebraska. The other licence requested was for the export of 277 600 cubic metres (9.8 million cubic feet) of natural gas per day to **Salmon Resources** for resale to **Enron Gas Marketing, Inc.**

Unigas requested a licence to export 2 820 000 cubic metres (100.0 million cubic feet) of natural gas per day to **Northern Natural** from 1 November 1991 to 1 November 2001.

Western Gas Marketing Limited filed an application for three licences to export natural gas to **Northern Natural** as follows:

- 1 345 600 cubic metres (47.5 million cubic feet) per day from the first day of the first full month following Governor in Council approval to 31 October 2001;
- 1 416 400 cubic metres (50 million cubic feet) from the first day of the first full month following Governor in Council approval to 31 March 1996;

- 708 200 cubic metres (25.0 million cubic feet) per day from the first day of the first full month following Governor in Council approval to 31 October 2001;

Western Gas also filed two export applications for additional licences to export natural gas to the United States. One application was for the export of 283 300 cubic metres (10.0 million cubic feet) per day to **Northern Minnesota Utilities** from 1 November 1991 to 1 May 2001. **Northern Minnesota Utilities** is a local distribution company serving 46 communities in northern Minnesota. The second application was for a licence to export 906 500 cubic metres (32.0 million cubic feet) per day to **Vermont Gas Systems, Inc.** from 1 November 1991 to 31 October 2006. **Vermont Gas** is a transmission and distribution company serving customers in northwestern Vermont.

Western Gas as agent for Northern Minnesota Utilities also applied to export 1 059 500 cubic metres (37.4 million cubic feet) of natural gas per day to **Northern Minnesota Utilities** from 1 November 1991 to 31 October 2002. The gas will be exported at Sprague, Manitoba, some will subsequently be imported at Rainy River, Ontario, then delivered to Fort Frances, Ontario, for re-export. The gas will be delivered to customers in western Minnesota and to **Boise Cascade** at International Falls, Minnesota.

The Board conducted an environmental screening of the proposed exports by means of written submission.

The Board expects to issue its Reasons for Decision in February 1992.

North Canadian Oils Ltd. and Poco Petroleum Ltd. - Natural Gas Export - GH-7-90

The Board held a hearing on 23 and 24 October 1990 in Vancouver on an application by **North Canadian Oils** and two applications by **Poco** for licences to export natural gas.

North Canadian Oils proposed to export up to 198 100 cubic metres (7.0 million cubic feet) of natural gas per day at Emerson, Manitoba over a 15-year period beginning 1 January 1991. The gas would be sold to **Ada Cogeneration Limited Partnership** for use at its cogeneration plant in Ada, Michigan.

In the light of information received from **North Canadian Oils** concerning a possible change in supply arrangements for the Ada project, the Board decided on 14 January 1991 to suspend deliberation on this application until all arrangements are finalized. **North Canadian Oils** was directed to inform the Board when agreements are reached with **Ada** and any other supplier to the project, as well as to file copies of the agreements with the Board and to serve them on all interested parties. It is the Board's intention to issue further

directions on procedure and reopen the hearing to consider this new information once all arrangements are in place.

In December 1991 the Board approved two licences to **Poco**.

The first licence, which will commence upon Governor in Council approval and end on 31 October 1999, authorizes **Poco** to export some 424 900 cubic metres (15.0 million cubic feet) of natural gas per day at Huntingdon, British Columbia. The gas will be used by **Washington Natural Gas Company**, a local distribution company serving residential, commercial and small industrial customers in the Puget Sound, Washington area.

The second licence, which will commence upon Governor in Council approval and end on 31 October 1999, authorizes **Poco** to export some 566 600 cubic metres (20.0 million cubic feet) of natural gas per day also at Huntingdon. The gas will be sold to **IGI Resources, Inc.** which in turn will resell the gas to **Intermountain Gas Company** and **C.P. National Corporation**.

Intermountain is a local distribution company serving residential, commercial and industrial customers in southern Idaho. **C.P. National** is a local distribution company serving residential, commercial and industrial customers in the states of Oregon, California and Nevada.

Canadian Petroleum Association - Review of Licence GL-111

In an application dated 29 May, the **Canadian Petroleum Association** requested that the Board review its decision in GH-5-88 with respect to the issuance of gas export Licence GL-111 issued to **Alberta and Southern Gas Co. Ltd.** **Alberta and Southern** currently holds licence GL-99 which expires on 31 October 1994. Licence GL-111 commences on 1 November 1994 and allows **Alberta and Southern** to export up to 116.4 billion cubic metres (4.1 trillion cubic feet) of natural gas between 1 November 1994 and 31 October 2005.

In its application, the **CPA** stated among other things that current actions by the **CPUC** to implement capacity brokering on the **Pacific Gas Transmission Company** pipeline system are inconsistent with the Board's decision in GH-5-88 since they "would abrogate the freely negotiated contractual undertakings upon which the GH-5-88 decision was based, would be contrary to the evidence that was relied on by the Board in reaching its decision, and would be inconsistent with the principles of Canadian and United States energy policy which formed the basis of this decision."

The **CPA** amended its original application on 27 November 1991 following a decision dated 6 November by the **CPUC** which directed **Pacific Gas and Electric Company** to covert its gas sales service on the **Pacific Gas Transmission** system to transportation service and to subsequently broker a portion of that capacity. The **CPA** said that the decision effectively directs **Pacific Gas and Electric Company** to terminate all long-term contracts with Alberta producers by October 1992.

In amending its original application, the **CPA** asked the Board to immediately vary all short-term export orders to add a condition that prohibits deliveries into the pipeline system of **Pacific Gas Transmission** of any Canadian gas destined for utilization in the northern California market that is not gas presently contracted by **Alberta and Southern** for sale to **Pacific Gas Transmission**. The **CPA** added that the condition should continue in full force and effect until the Board has held a hearing, made its findings and rendered a decision in respect to its application.

The Board decided in December to hold a public hearing commencing in February 1992 on the matter of gas exports to California. The Board also decided to immediately conduct a written hearing on interim measures which could be taken with respect to gas export orders and transportation access on **Alberta Natural Gas Co. Ltd's** pipeline system related to the displacement of licensed gas to the Northern California market.

Proposed Changes to the Application of the Market-Based Procedure – Proceeding GHW-1-91

In August 1991, the Board proposed some changes to the way in which it applies the Market-Based Procedure with respect to the licensing of natural gas exports, and requested comments from interested parties on these proposals. The proposals were primarily intended to streamline the hearing process by ensuring that only those issues which are germane to the public interest be addressed in public hearings. In addition, the Board clarified the way in which the Complaints Procedure is intended to work and proposed some minor changes to the pre-hearing process.

Interested parties' initial comments on the Board's proposals were submitted in mid-December. The Board expects to release a Decision in the spring of 1992 as to how the Market-Based Procedure is to be applied.

Electricity Exports

New Brunswick Power - Two Applications for Renewal of Export Authorizations - EW-1-90/EW-2-90

In January the Board approved two applications from **New Brunswick Power** requesting approval of seven licences to replace existing licences that were soon to expire and authorization of one new transaction.

The Board decided to consider both applications and sought the views of interested parties on whether to issue permits granting the requested authorizations without public hearing or to recommend that the Governor in Council designate the applications for licensing, thus necessitating a public hearing. The Board's review of the applications included an environmental screening.

Two of the requested authorizations were for carrier transfers through New Brunswick of electricity generated in the United States for consumption in the United States. The Board decided that the "nature and circumstances of such carrier transfers need not be subject to the Board's current export regulations".

Under the issued permits, **New Brunswick Power** will be able to make the following exports:

- up to 100 megawatts of firm power and 876 gigawatt hours of firm energy in any consecutive 12-month period from the Point Lepreau generating station to **Massachusetts Municipal Wholesale Electric Company** between 1 February 1991 and 31 October 1993 and 50 megawatts and 438 gigawatt hours of firm energy in any consecutive 12-month period between 1 November 1991 and 31 October 1994;
- up to 6 482 gigawatt hours of interruptible energy in any consecutive 12-month period to **Maine Electric Power Company**, between 1 February 1991 and 31 October 2000;
- up to 400 gigawatt hours of interruptible energy in any consecutive 12-month period to **Maine Public Service Company** between 1 February 1991 and 31 October 2000;
- up to 50 megawatts of firm power and 250 gigawatt hours of firm energy in any consecutive 12-month period to be wheeled by **Maine Public Service Company** through the State of Maine and returned to New Brunswick between 1 February 1991 and 31 July 2002;
- up to 179 gigawatt hours of interruptible energy in any consecutive 12-month period to **Eastern Maine Electric Cooperative, Inc.** between 1 February 1991 and 31 October 2000; and

- up to 23 megawatts of firm power and 201.48 gigawatt hours of firm energy in any consecutive 12-month period to **Eastern Maine Electric Cooperative, Inc.** between 1 February 1991 and 31 October 1993 and 21.5 megawatts and 188.34 gigawatt hours of firm energy in any consecutive 12-month period between 1 November 1993 and 31 October 1994. Up to 20 megawatts of this power will come from **New Brunswick Power's** thermal generation plant and the remainder from the Point Lepreau plant.

Ontario Hydro - Renewal of Export Authorizations - EW-3-90

In April, the Board approved an application from **Ontario Hydro** requesting the renewal of five export authorizations. The renewal allowed the utility to continue exporting interruptible and firm electricity in accordance with existing agreements to **The Consumers Power Company, The Detroit Edison Company, General Public Utilities, Minnesota Power, the New York Power Pool, Niagara Mohawk Power Corporation, the Power Authority of the State of New York,** and the **State of Vermont.**

After considering the submissions received from various interested parties, the Board issued four permits with the terms requested by **Ontario Hydro**, and a fifth for exports of interruptible energy with a three year term instead of the requested 15 year term.

Under the issued permits, **Ontario Hydro** will be able to make the following exports:

- up to 15 000 gigawatt hours of interruptible energy (of which no more than 10 000 gigawatt hours may be generated by fossil-fired facilities) in any 12-month period to **Consumers Power, Detroit Edison, Niagara Mohawk, Power Authority of the State of New York, New York Power Pool, Minnesota Power and Light, and General Public Utilities** between 1 July 1991 and 30 June 1994;
- up to 10 000 gigawatt hours of circulating power and energy in any consecutive 12-month period between 1 January 1996 and 31 December 2025 for simultaneous return to Canada;
- up to 112 megawatts of firm power and 1 320 gigawatt hours of firm energy to the **State of Vermont** between 1 July 1991 and 31 October 1992;
- up to 3 megawatts of firm power and associated energy to the **Power Authority of the State of New York** as a border accommodation between 1 July 1991 and 30 June 2021; and

- up to 100 kilowatts of firm power and associated energy as a border accommodation between 15 May 1991 and 14 May 2021.

The Board determined that the findings set out in its Reasons for Decision also applied to its environmental screening of the application. The Board found that any potential environmental effects and directly related social effects of the proposed exports would be mitigable to within prescribed standards with known technology.

Manitoba Hydro-Electric Board - Export of Electricity - EW-1-91

The Board is examining an application from **Manitoba Hydro** for three permits to export electricity to **Northern States Power Company** and **United Power Association in Minnesota**.

The Board requested interested parties to make their views known on the application before it determines whether to issue export permits or recommend to the Governor in Council that it designate **Manitoba Hydro's** application for licensing. Such a designation would necessitate a public hearing.

One permit is for the export of 200 megawatts of firm power and 883 gigawatt hours of firm energy per annum to **Northern States Power Company** during the summer seasons (1 May to 31 October) of 1997 to 2016.

The second permit is for the export of 400 megawatts of firm power and 1766 gigawatt hours of firm energy per annum to **Northern States Power** during the summer seasons of 1992 to 1994 and 150 megawatts of firm power and 663 gigawatt hours of energy per annum from 1995 through 2014.

The third permit is for the export of 150 megawatts of firm power and 663 gigawatts hours of firm energy per annum to **United Power Association** during the summer seasons of 1995 through 2014.

The exports would be made in accordance with the terms of seasonal diversity agreements providing for the return of electricity to **Manitoba Hydro** by the purchasers during the winter season. Those agreements also give **Manitoba Hydro** the right to purchase specific amounts of energy from its export customers when it faces "low water conditions" and requires such imports to meet its firm provincial demands and out-of-province firm commitments.

The Board is conducting an environmental screening of the proposed exports. In arriving at its decision, the Board will consider any information submitted by interested parties pertaining to the potential environmental impact of the proposed exports.

British Columbia Hydro and Power Authority and the British Columbia Power Exchange Corporation (POWEREX) - Export of Electricity - EW-2-91

The Board is examining by written submissions an application by **B.C. Hydro** and **POWEREX** for two six-year permits to export electricity to the western United States.

Interested parties have been requested to make their views on the application known before determining whether to issue export permits or recommend to the Governor in Council that it designate the application for licensing. Such a designation would necessitate a public hearing.

One permit is for the export of up to 2 300 megawatts of firm power and up to 6 000 gigawatt hours of firm energy in each year from 1 October 1991 to 30 September 1997.

A second permit is for the export of up to 20 000 gigawatt hours of interruptible energy less the amount exported, if any, under the firm electricity export permit from 1 October 1991 to 30 September 1997.

The Board has extended to 30 September 1992 the current export licences issued to **B.C. Hydro/POWEREX**. Any new export authorizations that the Board may issue in respect of this application will be effective from either 1 October 1992 or the date of issuance of such export authorizations.

The electricity would be exported to the **Bonneville Power Administration** and to other potential customers who are members of the **Western Systems Coordinating Council** and the **Northwest Power Pool**.

Pipeline Facilities

TransCanada PipeLines Limited - 1991/1992 Facilities and Associated Gas Export Licences - GH-5-89

In 1990 the Board held a public hearing to consider an application from **TransCanada** for approval to extend its pipeline system in the 1991/92 and then the 1992/93 contract years to serve expanding domestic and export markets. In its original application **TransCanada** proposed the construction of 1 592 km of pipeline, the installation of 21 new compressor units and two new compressor stations. With the exception of the one 4.5 km section of new pipeline at Iroquois, Ontario, all of the pipeline facilities applied for parallel **TransCanada's** existing system in Saskatchewan, Manitoba and Ontario. These facilities, which were finally estimated to cost \$2.4 billion, will allow **TransCanada** to transport an additional 19.2 million cubic metres of gas per day by the fall of 1992, primarily to export points in eastern Canada.

In the same hearing the Board considered 15 gas export applications associated with the requested facilities. Applications by **Indeck Gas Supply Corporation** and **Rochester Gas & Electric Corporation** for orders requiring **TransCanada** to receive, transport and deliver the applicants' natural gas under Section 71 were heard and denied.

During the hearing the Board also considered a number of toll-related issues, including:

- the toll methodology to be applied to the capital and operating costs of the proposed facilities;
- the appropriate toll treatment of variances in construction costs; and
- the toll treatment of fixed costs associated with underutilized facilities.

These toll-related matters as well as the means by which economic feasibility of the proposed facilities could be determined were considered in a separate phase of the hearing held between 28 May and 26 September 1990.

On 6 November 1990 the Board issued its decision on toll methodology and economic feasibility. The Board was of the view that the rolled-in methodology continues to be appropriate and decided that all costs related to facilities approved in **TransCanada's** 1991 and 1992 expansion program would be rolled into its rate base for toll purposes.

The Board also decided to determine the economic feasibility of **TransCanada's** pipeline facilities proposed in the GH-5-89 proceeding by having regard to evidence on all relevant factors which impact on the likelihood of the facilities being used at a reasonable level over their economic life and of the demand charges being paid. Other proposed evaluative tests to determine economic feasibility were not retained by the Board.

As part of the GH-5-89 hearing on 15 and 18 October 1990, the Board considered **TransCanada's** application for early approval to construct 391.4 kilometres of

system-wide pipeline looping, the 4.5-kilometre Iroquois extension and relocation of two portable compressor units for a total cost of \$546 million.

TransCanada requested early approval of the partial facilities to allow for their construction during the 1991-92 winter to ensure a November 1992 in-service date for its most assured requirements. The Board approved the application and issued its decision on 13 November 1990.

In May of 1991, the Board approved all the remaining facilities proposed by **TransCanada**.

The Board also approved 15 gas export applications for a total of 45.2 billion cubic metres (1.6 trillion cubic feet) for various periods of time. (For more information on the gas export applications approved in GH-5-89 please refer to page 13 in the *Natural Gas Exports Section*)

The Board found that the proposed facilities would create only minimal environmental impacts of a local and temporary nature if the proposed environmental protection measures are implemented.

TransCanada PipeLines Limited - Gananoque Extension - GH-4-90

In the fall of 1990, in Kingston and Gananoque, Ontario, the Board conducted a review by way of a public hearing of a previous Board decision to deny **TransCanada** approval to construct a new pipeline known as the "Gananoque Extension" (GH-1-89).

The pipeline was to have extended 25.2 kilometres from **TransCanada's** mainline east of Kingston to a point on the international border near Wolfe Island on the St. Lawrence River. It would have transported natural gas to be exported by **Western Gas Marketing Limited**, as agent for **TransCanada**, to **Niagara Mohawk Power Corporation** in the State of New York, beginning 1 November 1991.

On 18 March 1991, the Board denied **TransCanada's** review application. In releasing its Reasons for Decision on 20 June the Board found that **TransCanada's** evidence in respect of several environmental and socio-economic matters was incomplete and therefore inconclusive. Furthermore, the Board was not convinced that in selecting its proposed route **TransCanada** had applied its route selection criteria in a sufficiently rigorous manner or that it had adequately assessed potential alternative routes.

Interprovincial Pipe Line Company, a division of Interhome Energy Inc. - Natural Gas Liquids Storage Facility - GHW-5-90/RH-3-90

By an application dated 30 April 1990, **Interprovincial** sought approval of a proposal to construct in 1991 a natural gas liquids storage facility adjacent to its

Edmonton terminal. **Interprovincial** also applied for approval of a toll methodology for the proposed facility. The facility would cost \$18 million and include nine 350-metre sections of underground pipe-type storage vessels and related fill and pumpout lines and would allow shippers to accumulate natural gas liquids at the line rate and batch size needed for periodic injection into **Interprovincial's** pipeline system.

Prospective shippers who had entered into a facilities support agreement with **Interprovincial** also applied to the Board to ensure their access to the facilities.

The Board decided to consider matters relating to the construction and installation of the facilities by means of written submissions. An oral hearing was held from 12 to 17 November 1990 in Edmonton, Alberta to consider the need for the proposed facilities, the proposed toll design for these facilities and the shippers' applications with respect to access.

In February 1991, the Board approved the application and issued its Reasons for Decision in April 1991. The Board also determined that a stand-alone toll design will be applied to the facilities whereby all the costs will be borne by the specific users. In addition, the Board granted unapportioned access to the facilities for a group of nine prospective shippers who had asked **Interprovincial** to construct and operate the facilities.

The Board also conducted an environmental screening of the application.

Westcoast Energy Inc. - Adsett Pipeline Project - GH-6-90

The Board held a public hearing from 16 to 18 April in Fort Nelson, British Columbia to consider an application by **Westcoast** to construct the Adsett Pipeline.

In June the Board approved the application.

The proposal involved the construction of a 48-kilometre raw gas transmission pipeline from the Adsett gas field in northeastern British Columbia to **Westcoast's** Klua pipeline which extends to the Fort Nelson gas processing plant. The estimated cost of the facilities was \$8.3 million.

Initially, the proposed pipeline will enable **Westcoast** to provide firm transmission services to two shippers.

The Board conducted an environmental screening of the application. On 11 April, the Board received a notice of motion from the **Prophet River Indian Band** requesting the Board to review and rescind its findings on the environmental screening document. The Board decided on 13 May that it did not have the authority under the *Environmental Assessment and Review Process Guidelines Order* to review the findings of the screening document and denied the application for review.

TransCanada PipeLines Limited - Blackhorse Extension - GH-1-91

In July the Board denied an application by **TransCanada** to build the Blackhorse Extension pipeline in southwestern Ontario.

TransCanada proposed to build 20.6 kilometres of pipeline and associated facilities for service beginning 1 November 1991. The pipeline was to extend from **TransCanada's** Niagara Line to a delivery point near Chippawa, Ontario and was estimated to cost \$42.3 million. The extension would have interconnected with the proposed Empire State Pipeline, which is to serve central and western New York State.

In denying the application, the Board found that the markets proposed to be served by the extension could be served in a timely fashion by less expensive and environmentally superior means through the expansion of **TransCanada's** existing Niagara Line. The Board determined that the proposed facilities were not required.

The application was considered in a public hearing held between 22 April and 6 May 1991 in Niagara Falls and Ottawa.

The Board also conducted an environmental screening of the application by means of a written procedure separate from the hearing process.

TransCanada PipeLines Limited, ANR Pipeline Company, Rochester Gas & Electric Corporation and St. Clair Pipelines Limited - Review of Denial of TransCanada Blackhorse Extension

On 6 August **TransCanada, ANR, Rochester Gas & Electric** and **St. Clair Pipelines** filed an application for a review of the Board's decision denying the application by **TransCanada** to build the Blackhorse Extension.

On 9 August the Board decided that a recent decision by the **Federal Energy Regulatory Commission** in the United States constituted a changed circumstance which raised a doubt as to the correctness of the Board's decision and justified proceeding with the review. In its decision the **Federal Energy Regulatory Commission** approved construction of the Empire State Pipeline and denied competing applications.

Interested parties were invited to file with the Board by 30 August their comments on the merits of the review application. The applicants' reply comments were due on 16 September.

In light of the Canadian **Federal Court's** 18 October decision to quash the Board's 9 August decision to review (Refer to *Legal Actions* at page 62),

the Board decided on 12 November to seek comments from interested parties on whether a review should be held.

The Board will render its decision on whether to initiate a review in January 1992.

TransCanada PipeLines Limited - 1992/93 Facilities - GH-4-91

The Board held a hearing from 18 to 27 November in Calgary to consider an application by **TransCanada** to expand its natural gas pipeline system in western and central Canada in order to meet domestic and export requirements beginning 1 November 1992.

TransCanada's proposed expansion includes the construction of 278.2 kilometres of pipeline parallel to its existing pipeline in Saskatchewan, Manitoba and Ontario and the relocation of three portable compressor units.

The cost of the new facilities and the relocation is estimated at \$360.4 million.

The expansion would enable **TransCanada** to provide 4.424 thousand cubic metres (156.2 thousand cubic feet) per day of new firm service from Empress, Alberta, 49 % of which is destined for domestic users in eastern Canada, and 51 % for customers in the United States.

The proposed expansion on the **TransCanada** system, together with an increase in the capacity of the **Union Gas Limited** pipeline, would also provide 1.062 thousand cubic metres (37.5 thousand cubic feet) per day of new firm service in southwestern Ontario from Sarnia to Niagara Falls, Ontario.

During the hearing, the Board also considered an application from **Northland Power** for an order directing **TransCanada** to receive, transport and deliver gas offered to **TransCanada** by **Northern Power** and to provide adequate and suitable facilities for that purpose.

The Board expects to issue its decision on the application in the Spring of 1992.

Alberta Natural Gas Company Ltd. - System Expansion - GHW-2-91

The Board is holding a hearing by means of written submissions on an application by **Alberta Natural Gas** to expand its pipeline system to transport additional volumes of natural gas to markets in the western United States, particularly to southern California.

The proposed expansion consists of additional and modified compression facilities on the company's three existing compressor stations in southern British Columbia, at an estimated cost of \$81.8 million.

The expansion, coupled with pipeline looping proposed by **Foothills Pipe Lines (South B.C.) Ltd.**, would allow **Alberta Natural Gas** to transport an additional 26.4 million cubic metres (932 million cubic feet) of natural gas per day to the international boundary beginning 1 November 1993.

In the United States, the gas would be transported by proposed expansions of the pipeline systems of **Pacific Gas Transmission Company** and **Pacific Gas and Electric Company**.

At the end of the year the application was still under review.

Tolls and Tariffs

Westcoast Energy Inc. - 1991 Toll Application - RH-1-90

In January the Board issued its Reasons for Decision on an application from **Westcoast** for new tolls for the transportation of natural gas beginning 1 January 1991.

A public hearing had been held from 10 October to 6 November 1990 in Vancouver and in Ottawa.

The Board approved an increase in the company's rate of return on common equity from 13.25 to 13.75 %. **Westcoast** had requested a rate of 14.375 %. The Board also approved **Westcoast's** request that the common equity ratio remain at 35 %.

Trans Québec & Maritimes Pipeline Inc. - 1991/1992 Tolls - RH-2-90

In February the Board approved an application from **TQM** for new tolls to be charged effective 1 January 1991 and 1 January 1992.

A public hearing had been held in Ottawa from 10 to 13 December 1990, to consider the application. Matters other than rate of return were considered by written submission prior to the public hearing, with argument on all matters being heard at the hearing.

The Board approved a monthly toll of \$6.2 million for 1991, a 7.2 % increase in the previous monthly toll of \$5.776 million. The monthly toll for 1992 will be \$6.4 million, a further 3.0 % increase.

The Board also decided that a rate of return on common equity of 13.75 % on a common equity ratio of 25 % is fair and reasonable for both 1991 and 1992. **TQM** had requested that its rate of return on equity be set at 14.5 %.

TransCanada PipeLines Limited - Gananoque Extension - RH-4-90

The Board held a hearing on 26 and 27 November 1990 in Ottawa to determine the appropriate toll methodology to be applied to the costs associated with **TransCanada's** proposal to construct the Gananoque Extension. (Refer to *Legal Actions* at page 66,)

Since the Board denied the application for the construction of the Gananoque Extension, the Board did not issue a decision on the subject.

TransCanada PipeLines Limited - Toll Application - RH-1-91

The Board issued its final toll order on 2 August, its decision on 4 October and its Reasons for Decision on 30 December 1991 on an application by **TransCanada** for new tolls effective 1 January 1991.

In its order of 2 August, the Board approved new tolls for the company effective 1 July 1991 for the transportation of natural gas to markets in Canada and the United States.

In its 4 October decision, the Board approved a revenue requirement for 1991 of \$1.20 billion compared with **TransCanada's** forecast revenue requirement of \$1.22 billion. For 1990, the Board had approved a revenue requirement of \$934 million.

The Board also approved a rate of return on common equity of 13.5 %. **TransCanada** had requested 14.25 %. The rate previously in effect was 13.25 %.

With respect to the inclusion in its revenue requirement of costs related to **TransCanada's** move to Calgary, the Board decided to disallow approximately \$3.6 million of the total amount as applied for and to approve **TransCanada's** recovery in its tolls of an amount of \$43.7 million over a two-year period ending 31 December 1992.

The Board also made decisions on a number of other matters reviewed at the public hearings held between 14 May and 18 July in Calgary and Ottawa.

Interprovincial Pipe Line Inc. - 1992 Toll Application - RH-2-91

The Board commenced a public hearing on 2 December in Calgary to consider an application by **Interprovincial** to increase the tolls it may charge, beginning 1 January 1992, for transporting crude oil, natural gas liquids and petroleum products from Alberta to markets in Ontario and Québec.

Interprovincial is requesting an average increase of 12 % over the tolls currently in effect. The company is also requesting an 10.9 % increase in its net revenue requirement to \$348 million, and an increase in its rate of return to 13.5 % from the currently authorized 13.25 %.

Interprovincial also applied for its deemed equity ratio to be raised to 42.5 % from the current level of 40 %.

Among the issues the Board will examine at the hearing is the treatment of costs and the toll design methodology for the Sarnia to Montreal portion of the pipeline, both in its current idled state and under a scenario where the pipeline would be reversed to allow east to west flow of crude oil.

On 28 November, Interprovincial applied for an average interim toll increase of 12 % over the tolls currently in effect. On 13 December, the Board approved average interim tolls higher by 9 % than the tolls currently in effect.

Other Activities

Natural Gas

The Board issued 107 short-term orders either for the export, the import or the transit movement of natural gas in 1991. The Board also issued 16 new licences and approved amendments to 14 existing licences during the year. (See *Appendix C4*)

During 1991 the Board monitored natural gas export transactions with regard to the terms of licence authorization as well as export movements under orders. It collected and published monthly data on export prices, sales, and associated transportation costs.

These monthly data were also used by a committee of officials of federal and producing-province governments to assess export prices against domestic prices.

Propane and Butanes

During 1991 the Board continued to monitor exports of propane and butanes. In this regard, the Board issued 50 orders for the export of propane and 42 orders for the export of butanes. As a condition of the orders, companies submit monthly data to the Board on the actual exports, including prices and volumes. In addition, companies provide information on their supply and the disposition of these products. The data are analyzed, and aggregated reports are provided to the industry and other interested parties.

Ethane

For purposes of export regulation, ethane is treated the same as natural gas. In 1991, there was one order issued to export ethane.

Oil

In 1991 the Board issued 122 orders for the export of crude oil and petroleum products. The Board receives monthly data from the industry on export volumes and prices for crude oil and petroleum products. The statistics are compiled and analyzed, and consolidated reports are issued to the industry and other interested parties on a monthly basis.

Electricity

During 1991, the Board continued its surveillance of exports to ensure compliance with the conditions contained in permits, licences and orders previously approved by the Board. The Board issued 17 export permits, but

revoked nine orders and three permits. The Board also amended the conditions of four licences, one order, three permits and one power line certificate.

As part of its monitoring function, the Board receives data on export volumes and revenues from each exporter and compiles these into a monthly report which is issued to exporting utilities, government departments and other interested parties. The monthly report also includes data on import volumes and costs.

Interprovincial Trade in Electricity

The Board has completed the first phase of its review, undertaken at the request of the Minister of Energy, Mines and Resources, to identify and examine the measures that could be developed to:

- enhance interprovincial trade in electricity;
- encourage greater co-operation between electric utilities; and
- enable buyers and sellers of electricity to have commercial access to available transmission capacity through intervening provinces for wheeling purposes. (Wheeling is the transmission of power belonging to one utility through the circuits of another utility for delivery to either a third party or back to the originating system.)

The Board's review is proceeding on two tracks: the first is concerned with interutility co-operation, the second with wheeling and transmission access. During the year the Board prepared several reports to promote a better understanding of the nature of the problems and the critical issues involved. These reports have been reviewed and commented upon by provincial governments and utilities. As part of the consultative process, the Board intends to solicit comments from interested parties on the results of its preliminary investigations.

Other Electrical Activities

During the year the Board continued to keep the Minister of Energy, Mines and Resources informed of the status of electricity exports. In both Canada and the United States, the Board also continued to consult with and contribute information to other government departments and industry groups which coordinate the operation of electric power utilities throughout North America.

The Board provided the Department of Energy, Mines and Resources with technical assistance on a reliability analysis of Manitoba Hydro's Nelson River high-voltage direct-current transmission system.

Pipeline Activities

The Board regulates a total of 53 natural gas, oil and products pipeline companies. The associated pipeline systems are shown in *Figure 1* and *Figure 2*.

All new pipeline facilities under the Board's jurisdiction must be authorized by the Board prior to construction and operation. The Board is responsible for monitoring their construction to ensure compliance with the Board's safety and environmental regulations and with the specific conditions of the approving order or certificate. In addition, the Board reviews construction and operating costs to ensure that toll payers receive cost-efficient service. Certificates are issued for new pipelines longer than 40 kilometres if they are approved by the Board following a public hearing, as required by the *National Energy Board Act*. All certificates and orders issued during 1991 approving new pipeline facilities are listed in *Appendices B (Oil) and C (Gas)*.

The *Onshore Pipeline Regulations* have been in effect since 1 September 1988. Proposed amendments to the regulations will be released to the industry for comments in 1992. The amendments will reflect the outcome of discussions between the Board and the Canadian Pipeline Industry Committee on the inquiry into a 1985 pipeline accident near Camrose, Alberta. In addition, the proposed amendments will include references to the new editions of the **Canadian Standards Association** pipeline standards, which have also been amended to incorporate certain recommendations from the Board-industry deliberations on the Camrose accident.

The Board continues to rely on the **CSA** standards to provide the technical requirements for the design, construction, and operation of oil and gas pipelines under its jurisdiction. Accordingly, the Board is committed to maintaining a strong participation in the standards development activities of the **CSA**.

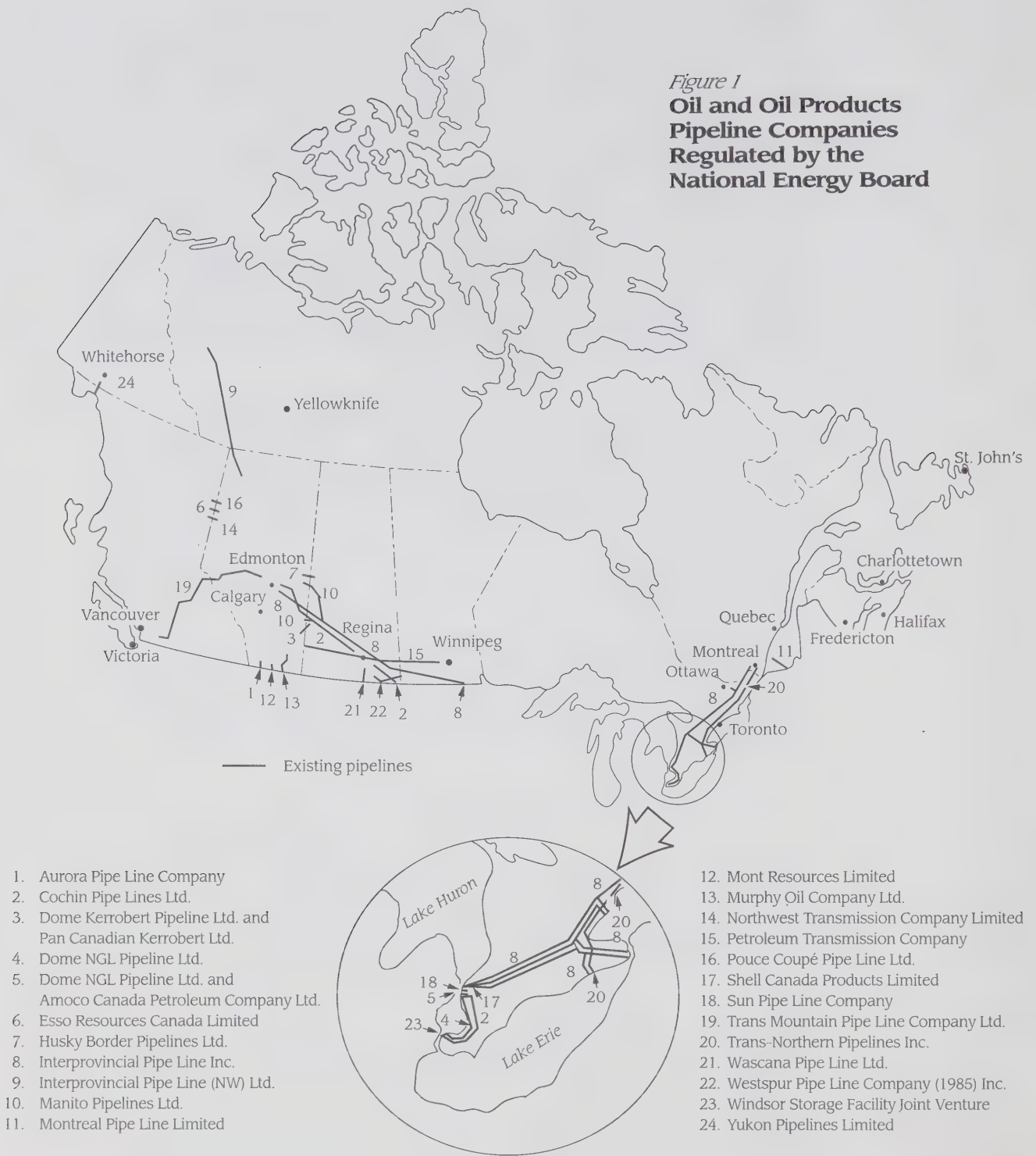
Compliance Monitoring, Audits and Inspections

The Board continues to monitor compliance with the provisions of the *Onshore Pipeline Regulations* through construction inspections of new facilities, documentation audits, and safety audits of operating facilities. As part of the construction inspections and safety audits, the Board generally monitors compliance with the provisions of *Part II* of the *Canada Labour Code*.

Northern Pipeline Agency

In 1991 the **NPA** continued to rely on the Board for technical advice, to assist it in carrying out its responsibilities under the *Northern Pipeline Act*. This advice was provided in connection with the construction of two new compressor stations within Alberta on the eastern delivery leg of the pipeline system of **Foothills Pipe Lines Ltd.**, and in connection with the review of **Foothills'** proposal to expand the capacity of its western delivery leg by adding 78 kilometres of line pipe in southern British Columbia.

Figure 1
**Oil and Oil Products
 Pipeline Companies
 Regulated by the
 National Energy Board**



Pipeline Incidents

The Board requires detailed reports of all incidents involving personal injury, fatality, pipeline malfunctions (such as leaks, breaks, fires or explosions) or any other events which result in a loss of service of a pipeline under its jurisdiction. Accident investigations or public inquiries are conducted to ascertain whether there was any contravention of Board regulations at the time of the accident, and whether the regulations should be amended in light of the accident. As well, these reports and inquiries are considered when reviewing pipeline safety, operational standards and regulatory requirements.

If a pipeline is damaged, the Board ensures that steps are taken to provide protection to the public and to property, to contain the spill of hydrocarbons, and to repair the damaged pipeline as soon as possible so that essential service may be restored. The Board continues its surveillance of the site to ensure the effectiveness of the company's environmental rehabilitation program.

During 1991 the Board carried out a number of field inspections of pipeline incident locations to monitor the implementation of company emergency, safety and environmental protection procedures.

Table 2 identifies the causes of pipeline incidents in the last five years.

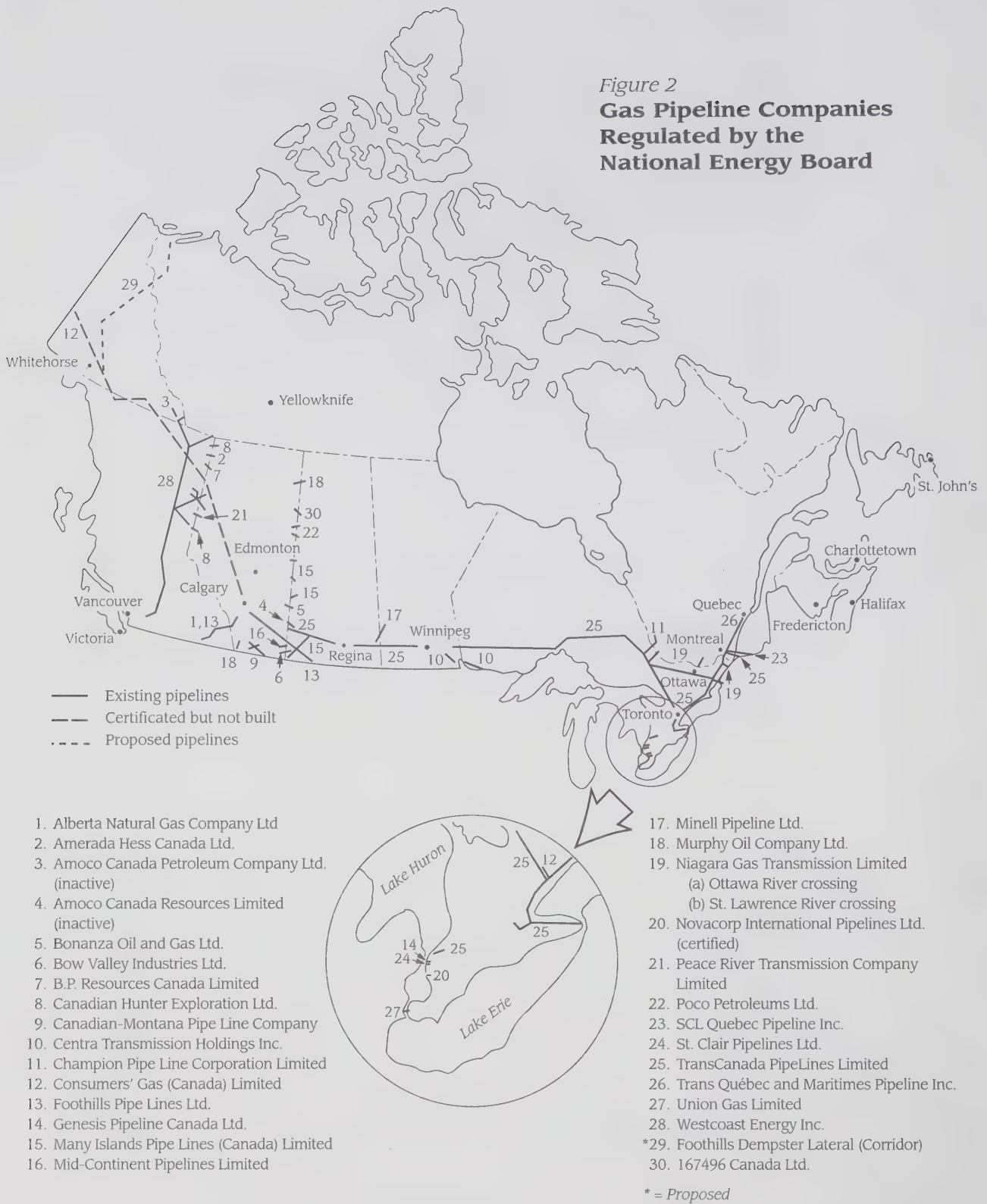
In addition to the 49 incidents (which included one fatality) reported in *Table 2*, 341 relatively minor workplace injuries were reported in 1991. The Board is currently reviewing its reporting requirements to focus on more serious injuries. Currently, an injury that requires hospital treatment is considered reportable. In many locations, however, the closest medical facilities are hospitals at which even minor injuries are treated, thereby causing those minor injuries to be reported to the Board.

Table 2
Causes of Pipeline Accidents 1987 - 1991

	1987	1988	1989	1990	1991
Defective Welds	3	3	5	0	3
Material Failure	4	7	12	12	16
Third Party Damage	8	6	2	5	9
Corrosion	8	4	3	1	2
Other ^(a)	15	18	26	29	19
Total	38	38	48	47	49

^(a) Includes workplace and construction accidents, operator errors, earth movements, and other causes.

Figure 2
**Gas Pipeline Companies
 Regulated by the
 National Energy Board**



The *Canadian Transportation Accident and Safety Board Act* came into effect on 29 March 1990. This Act established a new Board with the mandate to conduct independent investigations and public inquiries, if necessary, into any commodity pipeline incident within its legislative jurisdiction. The Transportation Safety Board of Canada takes precedence over the National Energy Board with respect to the investigation of causes of and factors contributing to incidents related to the operation of a pipeline.

The Transportation Safety Board of Canada and the National Energy Board are in the process of drafting a Memorandum of Understanding concerning their respective roles in future incident investigations.

Approvals and Construction

During 1991 the Board held public hearings on applications for new facilities from **TransCanada PipeLines Limited**, **Westcoast Energy Inc.** and **Interprovincial Pipe Line Company**. The details of these proceedings are reported under *Hearings, Inquiries and Reviews*, beginning on page 25.

During 1991 **TransCanada** constructed 799.8 kilometres of pipeline and added three new compressor units on its system.

Westcoast Energy Inc. constructed 77 kilometres of looping along its mainline (Fort Nelson and south Mainlines), and completed two new pipelines, the Klua pipeline (33.5 kilometres) and the Hossitl pipeline (45 kilometres). The Hossitl pipeline was authorized by the Board in late 1990. The McMahon Plant expansion, which also received Board approval in 1990, was completed in 1991. Originally part of the expansion project, the McMahon meter station will be resubmitted by **Westcoast** as a new application in early 1992. The Board also authorized the purchase by **Westcoast** of a portion of the **Petro-Canada Inc.** refining facility located adjacent to the McMahon Plant.

Interprovincial Pipe Line Company, a division of Interhome Energy Inc. received Board approval for terminalling and tankage facilities to be constructed at Hardisty, Alberta.

Over the course of the year the Board also issued 63 orders for the construction of new pipeline facilities totalling \$381 million. Included in these projects were several new pipelines such as:

- **Amerada Hess Canada Ltd.'s** 25.5 kilometre gas pipeline from its Boundary Lake gas processing facilities in British Columbia to **NOVA's** Ole receipt point in Alberta;
- **Bow Valley Industries Ltd.'s** 5-kilometre gas pipeline near Medicine Hat, Alberta, to connect a gas well in Alberta to the **Bow Valley** gathering system in Saskatchewan;

- **Husky Border Pipeline Ltd.'s** four 10.5-kilometre oil pipelines, extending from **Husky Oil's** refinery and pipeline terminal in Lloydminster, Alberta, to the Bi-Provincial Upgrader storage tanks in Saskatchewan;
- **Canadian Hunter Exploration Ltd.'s** 3.7 kilometre gas pipeline crossing the British Columbia/Alberta border near Grande Prairie;
- **Murphy Oil Company Ltd.'s** 12-kilometre gas pipeline crossing the Alberta/Saskatchewan border some 60 kilometres north of Lloydminster; and

Approvals were also granted by the Board to permit corporate realignments, sales, purchases, deactivations and abandonments of pipeline facilities.

Financial Regulatory Matters

Background

Section 59 of the *National Energy Board Act* states that “the Board may make orders with respect to all matters relating to traffic, tolls or tariffs”. The wide scope of this power is governed by the requirement that “all tolls shall be just and reasonable, and shall always, under substantially similar circumstances and conditions... be charged equally to all persons at the same rate”. Fulfilling these responsibilities is the main objective of the financial regulation activities of the Board.

Of these activities, toll adjustment proceedings are the most time-consuming and visible to the public. Other financial regulation activities are aimed at ensuring that tolls remain just and reasonable. Hence, the Board monitors the financial performance of the companies under its jurisdiction and engages in periodic audits of their accounting books and records.

At present the Board regulates 53 pipeline companies, 30 of which are involved in the transportation of natural gas, and 23 in the transportation or storage of oil and petroleum products.

For regulatory purposes, pipelines are segregated into two groups - the ten gas and oil pipeline companies with extensive systems belong to Group 1, and those with less elaborate systems belong to Group 2. Under this grouping, which the Board introduced in 1985, the lesser degree of financial regulation to which the smaller pipelines are now subjected better reflects the relative size of their operations. While the Board may undertake on its own initiative a review of the tolls of any company under its jurisdiction, the tolls of the Group 2 companies are normally reviewed only on receipt of a complaint. Otherwise, the monitoring of the Group 2 companies consists primarily of a review of their annual financial statements.

The operations of the Group 1 companies are closely monitored by the Board. The companies are required to submit quarterly surveillance reports of their financial and operating performance, which are reviewed in detail, and their accounting books and records are audited on a periodic basis. Increases and decreases in the tolls of these pipelines must receive Board approval before they can be implemented and amendments to their tariffs are usually reviewed prior to their effective dates. Their applications for toll adjustment are frequently considered in oral public hearings, although written submissions are used when appropriate.

Within Group 1, however, the Board has reduced the degree of financial regulation of three Group 1 pipeline companies, namely **Alberta Natural Gas Company Ltd**, **Interprovincial Pipe Line (NW) Ltd.** and **Cochin Pipe Lines Ltd.** Now their tolls, tariffs, and amendments are mainly reviewed on a complaint basis.

Group 1 Toll Adjustments

During 1991 the Board held oral public hearings to consider new tolls and tariffs for **TransCanada PipeLines Limited** and **Interprovincial Pipe Line Inc.**. In addition, it issued Reasons for Decision for several proceedings that were started in 1990, including those related to **TransCanada, Interprovincial, Westcoast Energy Inc.**, and **Trans Québec & Maritimes Pipeline Inc.** The Board was also involved in the toll design aspects of two facilities applications from TransCanada. The details of these proceedings can be found reported under *Hearings, Inquiries and Reviews*, beginning on page 31.

The Board considered several applications and requests that did not require public hearings. The items described below are the main ones in that category for 1991.

On 3 August 1989 the Board directed **Alberta Natural Gas Company Ltd.** to review its gas transportation contracts with its shippers to eliminate certain shortcomings and to ensure the publishing of clear terms of access in a tariff. The Board approved a new tariff on 11 July 1991 after an extended period of review by the Board, the company and interested parties.

Based on its monitoring of the operations of **Alberta Natural Gas**, in December 1989, the Board directed the company to modify its calculation of its monthly cost of service for both tariff and billing purposes. In February 1990, the company applied for a review of the Board's decision, which the Board agreed to conduct, and on 5 July 1990 the Board decided to re-affirm its earlier directive. On the latter date, the Board also invited comments from the industry on a refinement to the method of calculating the company's cost of debt. Based on comments from interested parties and the company, on 1 March 1991 the Board decided to consider the entire debt component as long term and approved a cost rate of 11.5 % for the deemed debt amount.

On 16 September 1991 **Alberta Natural Gas** filed a revised cost of service to be effective 1 November 1991, which reflected an increase in rate of return on equity from 13.25 to 13.75 % and a decrease in depreciation. The Board approved the requested change in depreciation methodology effective 1 October 1991 and accepted the other changes in cost of service without commenting on them.

Foothills Pipe Lines Limited filed an application in January 1991 for a decrease in its interruptible tolls for the transportation of natural gas in Saskatchewan (Zone 9) for the period of 1 April 1991 to 31 March 1992. On 28 March 1991 the Board approved new tolls for Tier 1 and Tier 2 services which, on average, are 5.6 % lower than those previously in effect.

Trans-Northern Pipelines Inc. filed an application in February 1991 to increase its tolls for the transportation of refined petroleum products. The Board made the company's existing tolls interim effective 1 April 1991, and released its decision on the application on 1 October 1991. The Board approved a toll

increase of 12.2 %. It also approved a temporary toll surcharge for the remainder of 1991 to allow the company to recover the shortfall resulting from the lower tolls that were charged during the interim period.

On 30 April 1991 **Unocal Canada Limited** applied to the Board for a decrease in the toll surcharge applicable to the Hossitl raw gas transmission facilities of **Westcoast Energy Inc.** located in northeastern British Columbia. In accordance with the approved policy governing its calculation, the surcharge was set based, among other things, on limitations to the availability of capacity to process the gas to be transmitted through the new facilities. However, as **Unocal** argued in its request, the limitations were removed when substantial processing capacity became available after **B.C. Gas Inc.**, a major customer of **Westcoast**, decided not to convert all of its sales contracts to service contracts. On 31 October 1991 the Board found that this availability of capacity rendered invalid the original calculation of the surcharge and decided to grant **Unocal's** request for a downward adjustment. The Board's decision on the final level of the surcharge was issued early in 1992.

Pacific Northern Gas Ltd., a sales customer of **Westcoast**, applied to the Board on 8 July 1991 for priority to access service capacity on **Westcoast's** system effective 1 November 1991 to allow the company to maintain its level of contracting with **Westcoast** in converting from a sales to a service customer. The Board approved the application on 19 September 1991.

On 8 August 1991, **Westcoast** applied to the Board for permission to delay implementing a system of daily billing by which customers would be billed each month for the actual volumes of interruptible gas taken each day in the two residue gas transmission zones of its system (Zones 3 and 4). The Board expected that daily billing would be in place by the start of 1992 to replace the current billing system where customers are paying interruptible tolls only when they exceed their full entitlement for the month under their firm service agreements. After having considered comments from interested parties and **Westcoast**, the Board agreed to the deferral on 20 December 1991; however, it required **Westcoast** to carry out a study to determine whether the current billing system is being abused and to explain why daily billing should not be implemented by the start of 1993.

On 7 November 1991 the Board approved revisions to the tariff of **Westcoast** to allow the company to eliminate the transportation storage service to the underground storage reservoir of **Unocal** located in the transmission zone north of compressor station No. 2 (Zone 3). The Board also approved amendments to the general terms and conditions applicable to Zone 3 that ensured that the shippers who continued to use **Unocal's** storage reservoir enjoyed the same operating flexibility that they had under the storage service.

Centra Transmission Holdings Ltd. (formerly **ICG Transmission Holdings Ltd.**), a Group 2 company, filed a new tariff for a toll increase effective 15 February 1991. In its filing, the company explained that the increase is due to a \$1.2 million increase in cost of service occasioned by the expansion of its

system during 1990 to serve a new cogeneration plant located at Fort Frances in the Lake of the Woods region of northern Ontario. On 29 April 1991, the **Corporation of the Town of Fort Frances** filed a complaint with the Board in which it asked that the toll increase be suspended. The Board decided to consider the request and, on 1 August 1991, made **Centra's** tolls interim pending a Board review of the matter. On 16 December 1991 **Centra** requested a revision to its interim tolls, which the Board approved on 30 December 1991. Final submissions from interested parties on the complaint were filed with the Board in early 1992.

Toll Adjustment Procedures

On 29 January 1990, the Board initiated a review of the toll adjustment procedures for **Interprovincial Pipe Line Company, Trans Mountain Pipe Line Company Ltd.** and **Trans-Northern Pipelines Inc.** as set out in Orders TO-4-85, TO-5-85 and TO-6-85, respectively. These procedures, which are almost identical for all three companies, were established to allow expedited toll adjustments without oral hearing. The Board questioned the continued appropriateness of the procedures when it became aware that they posed several difficulties, not only for the Board, but also for the pipeline companies involved and interested parties. On 14 February 1991, the Board issued its decision on this matter. Among other things, the Board ruled on various deadlines associated with the different types of applications, on filing requirements prior to and during the review, as well as on matters related to process.

Task Forces

In recent years a number of Group 1 pipeline companies have established joint industry task forces on toll, tariffs and operating matters. These task forces provide a forum for parties to not only exchange information, but also discuss and possibly resolve issues before applications are filed with the Board. Recent experience showed that task forces have been successful in both resolving certain issues and in reducing the number of matters requiring Board resolution. Currently, three pipeline companies have set up task forces - **Westcoast Energy Inc., TransCanada PipeLines Limited** and, more recently, **Trans Mountain Pipe Line Company Ltd..**

During 1991 **Westcoast** continued to rely on its Task Force on Tolls and Tariffs before involving the Board in significant matters affecting its regulation. **TransCanada** submitted Task Force Reports as part of its applications for new tolls for 1991 and 1992. The resolutions contained in the report filed in the 1991 proceeding contributed to a shorter hearing. **Trans Mountain** also included a summary of the outcome of its negotiation process as part of its application for new tolls for 1992. The summary afforded all intervenors the opportunity to present their comments on the negotiated issues.

Financial Information

The 1991 financial information for the Group 1 companies may be found in the *Financial Regulation Appendices E1* and *E2*. These tables are the source for the information on rate base and revenue requirements illustrated in *Figure 3* and *Figure 4* for the oil and gas pipelines respectively. *Figure 5* provides a comparison of the rates of return on common equity approved by the Board with the actual rates earned for each of the companies.

Figure 3
Group 1 Oil Pipelines
Rate Base and Revenue Requirement

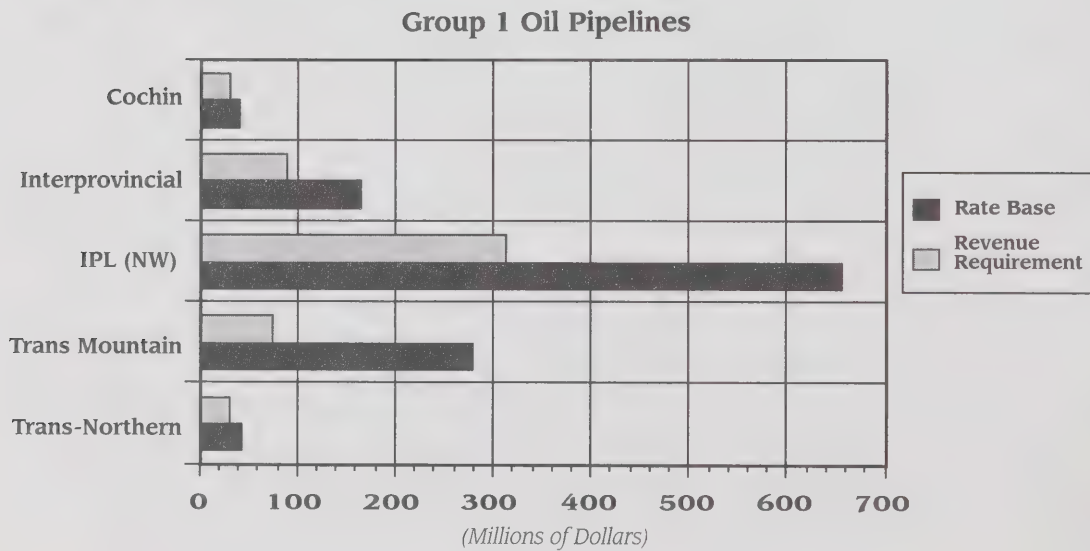
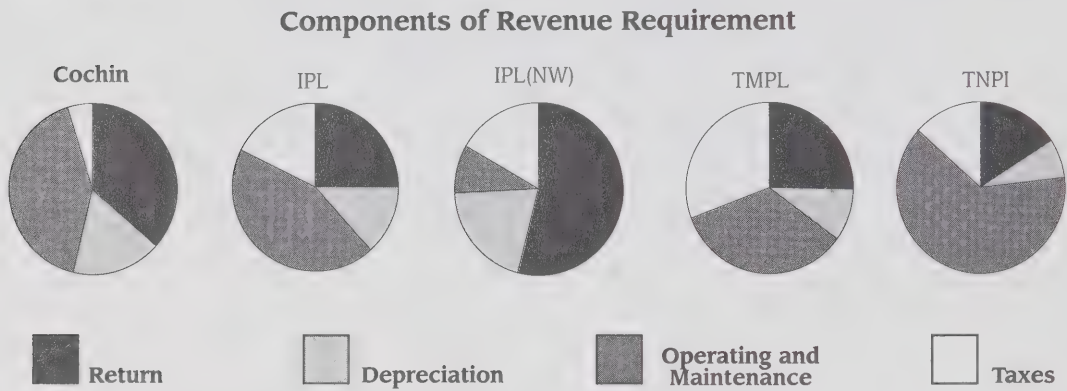
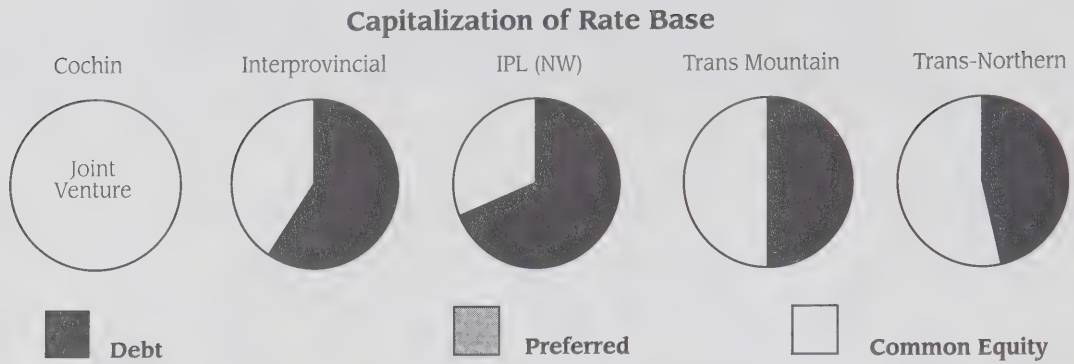
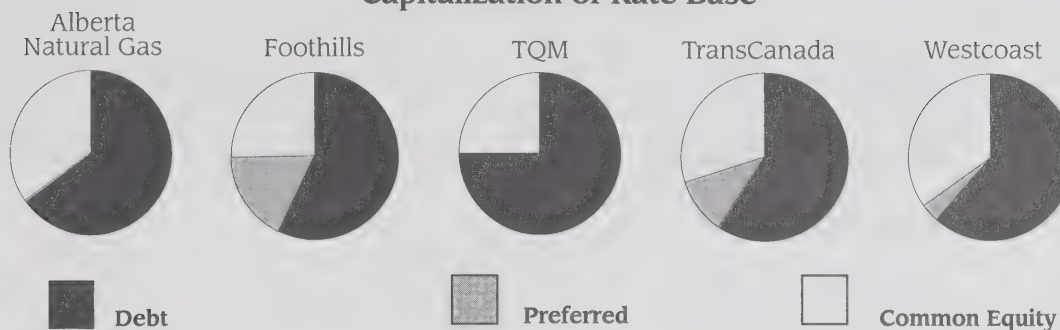


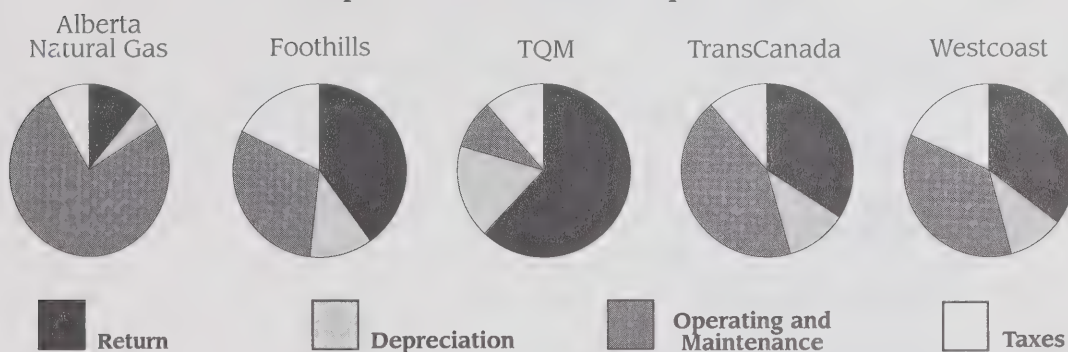
Figure 4

Group 1 Gas Pipelines **Rate Base and Revenue Requirements**

Capitalization of Rate Base



Components of Revenue Requirement



Group 1 Gas Pipelines

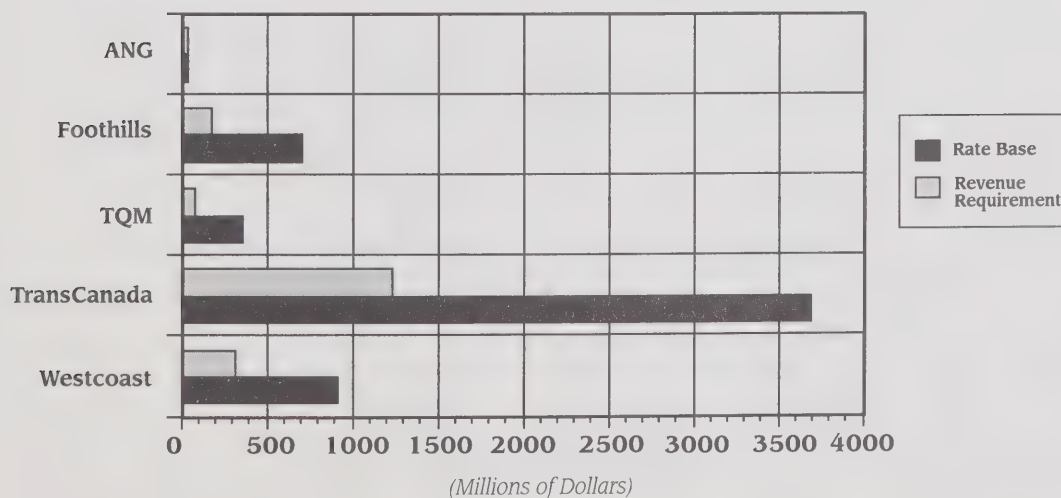
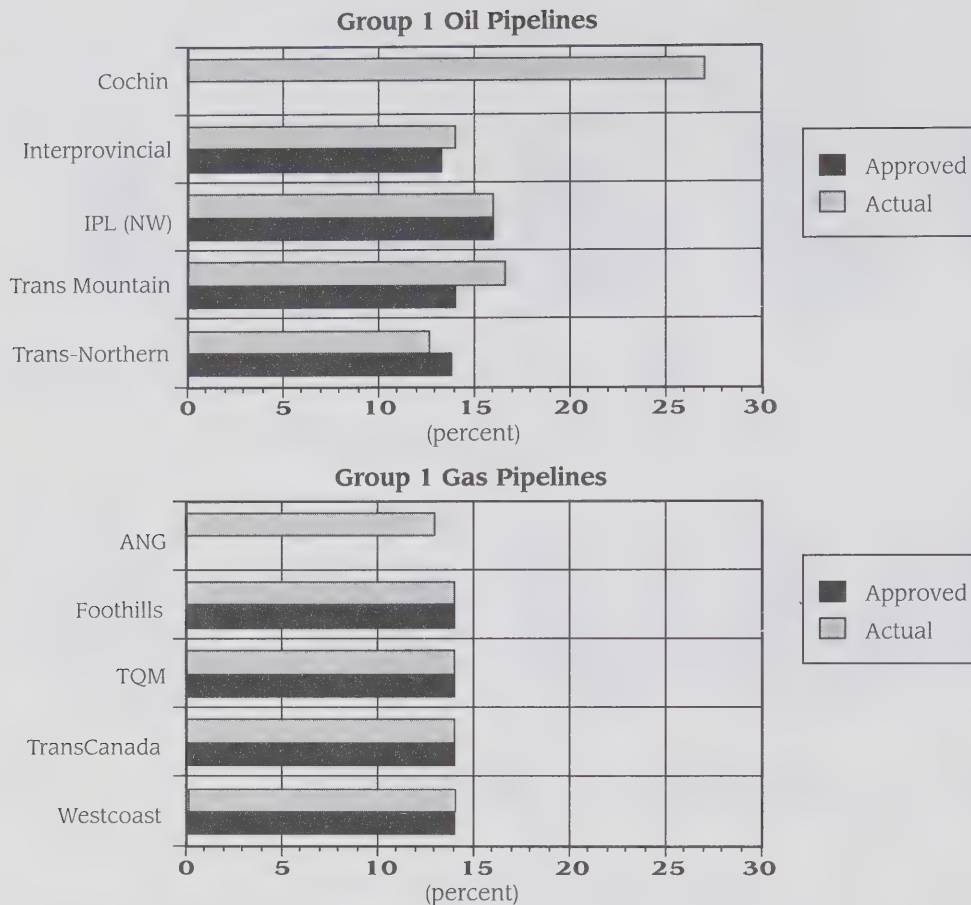


Figure 5
Group 1 Companies
Rate of Return on Common Equity



1991 Common Equity		
OIL PIPELINES	Ratio	% Return
Cochin	N/A	26.99
Interprovincial	41	14.03
IPL (NW)	31	16.00
Trans Mountain	50	16.60
Trans-Northern	54	12.60
GAS PIPELINES		
Alberta Natural Gas	35	13.38
Foothills	25	14.25
TQM	25	14.44
TransCanada	30	13.61
Westcoast	35	13.65
Reference: Financial Regulation Appendices		

Environmental Matters

Since its creation in 1973, the Environment Branch (now the Environment Directorate) of the Board has, as part of the Board's responsibilities under the *National Energy Board Act*, paid specific attention to those environmental issues associated with applications for certificates and orders to construct and operate international and interprovincial pipelines, and international power lines. In making its decisions on those applications, the Board takes into consideration environmental concerns related to such matters as air, land, and water pollution; disturbance of renewable and non-renewable resources; the integrity of natural habitats; the disruption of land and resource use; and the protection of landowner rights.

Companies preparing an application to the Board are encouraged to anticipate and discuss with all levels of government, public interest groups, and affected landowners, the environmental issues and concerns that the proposed project could create. Such early planning with respect to environmental matters produces a more complete application addressing the appropriate alternatives and taking into account the public's concerns.

The environmental assessment submitted by the applicant is an important first step in the Board's review process. The report describes in detail the proposed pipeline or power line corridor in its existing state, the anticipated impact of the project on that corridor, any public concerns associated with the project, and the procedures to be implemented by the company to mitigate any impacts. In addition, the Board ensures that, where negative effects on the environment cannot be avoided, companies implement the proper mitigative measures during construction and during the rehabilitation of the affected area. Where potential impacts on the environment are identified, the Board requires the development of an environmental issues list which is used as a method of tracking the status of issues during the construction and operation of a project. The issues list complements the environmental assessment process and provides a focus for environmental protection activity during all phases of a project.

To ensure the highest level of environmental protection, the Board welcomes interventions at hearings from local environmental and public interest groups, as well as concerned individuals. To encourage public participation, the Board often convenes its hearings in the area where construction impacts would occur.

The Board conducts inspections during pipeline and power line construction as part of its environmental protection program to ensure compliance with the companies' environmental protection procedures and the Board's requirements. Companies constructing energy transmission facilities also must submit post-construction monitoring reports which document the restoration of the right-of-way following construction and which update the environmental issues list.

Furthermore, the Board ensures that pipelines are operated and maintained in an environmentally acceptable manner. The Board's activities include periodic inspections to monitor the condition of rights-of-way and inspections of pipeline

incident sites to ensure that environmental protection, restoration and maintenance measures are fully implemented. The Board conducts periodic inspections of pipeline pump and compressor stations, including noise surveys and inspections of hazardous material storage facilities. In addition, the Board monitors the operation of three gas plants operated by **Westcoast Energy Inc.**, with particular emphasis on the monitoring of sulphur emissions and liquid effluents from waste-water retention ponds.

In 1991 the Board carried out periodic environmental inspections of several pipeline construction projects, including **TransCanada PipeLines Limited's** looping project through a portion of the Great Sand Hills of Saskatchewan. That work was of special public interest because of a land-use moratorium imposed in July of 1990 by the **Government of Saskatchewan's Department of Environment and Public Safety** on the sensitive core area of the Great Sand Hills. In complying with Board regulations **TransCanada** will submit environmental monitoring reports in December of 1991 and 1992. Where necessary, additional remedial action will be taken to repair any damaged sites in the Great Sand Hills.

In addition to carrying out periodic environmental inspections of construction activities in 1991, Board inspectors also monitored the rights-of-way of projects completed in 1988, 1989 and 1990. They included **TransCanada's** 1988 and 1989 looping programs in the Niagara region, its 1989 looping program in northwestern Ontario and **Westcoast's** Umbach Line and North Jedney Extension in northeastern British Columbia. The restoration of the rights-of-way inspected in 1991 continues satisfactorily with few environmental impacts resulting from the construction projects. The Board will continue to monitor those rights-of-way to ensure that they are fully restored.

In 1991, the Board continued its procedure of conducting periodic inspection of operational pipeline systems to ensure that right-of-way maintenance was occurring. Due to the relocation of the Board's operations to Calgary, Alberta, the Board concentrated its early 1991 inspection efforts on pipeline systems in eastern Canada. The **Trans-Northern** system in southern Ontario, the Montreal Pipeline system south of Montreal, Québec, and all the pipeline crossings of the St. Clair River in the Sarnia, Ontario area were inspected. It was observed that all those rights-of-way were being maintained in an acceptable manner.

Presently, 11 companies under the Board's jurisdiction have operating equipment which contain polychlorinated biphenyls (PCBs) or have PCB-contaminated materials in storage. The Board requires companies to provide updated inventories of PCBs still in service or in storage, and conducts inspections where appropriate. As well, the Board monitors PCBs in storage and in-service at facilities under its jurisdiction. The four inspections conducted in 1991 found that all sites were in compliance with the federal *Interim Order Respecting the Storage of Wastes Containing Chlorobiphenyls*.

The Board also responded to several landowner complaints concerning impacts caused by the construction and operation of pipeline facilities.

Recent Environmental Activities

The last three years have seen an increase in public awareness and a number of developments in government policy regarding environmental matters. In response to these developments, several new environmental initiatives have been undertaken by the Board.

During 1991, in response to an earlier letter of guidance from the Board, companies applying for certificates or orders implemented programs to notify the public early of proposed energy projects. Public input was then incorporated into applications submitted to the Board.

Recognizing the close and important relationship between energy and the environment, the Environment Branch provided advice on environmental matters, which was incorporated into the Board's report on *Canadian Energy Supply and Demand*. The advice related specifically to emissions of certain gases associated with the production and consumption of fossil fuels.

Under the *Environmental Assessment and Review Process Guidelines Order* ("EARP Guidelines Order"), the Board conducted environmental screenings of applications for exports with the aim of determining the significance of any environmental issues which might be associated with the proposed exports.

During 1991 the Board screened a total of 18 applications for gas and oil exports through its public hearing process: of these 17 were dealt with through written submissions.

To avoid any undue regulatory burden on applicants, especially for those projects where the environmental effects would be insignificant, an 'exclusion list' was developed in cooperation with the **Federal Environmental Assessment Review Office**. The list identifies the types of proposals that would not normally be expected to produce any adverse environmental effects and, as a result, would be automatically excluded from further examination under the *EARP Guidelines Order*.

During 1991 the Board monitored the progress of *Bill C-13*, the Canadian Environmental Assessment Act, and assessed the potential impact of the passage of that Act on the Board's environmental assessment and hearing processes.

The Board also studied the rulings of the **Supreme Court** and **Courts of Appeal** relating to environmental assessment proceedings, in order to determine how those rulings will impact upon the Board's environmental jurisdiction.

In October 1990, **Hydro-Québec**, the **Grand Council of the Crees (of Québec)** / the **Cree Regional Authority** and **le Procureur général du Québec** appealed a Board decision relating to the issuance of licences to **Hydro-Québec** for the export of electricity. **Hydro-Québec** and **le Procureur**

général du Québec appealed, among other things, the Board's decision to make the licences issued subject to the condition that these shall remain valid to the extent that any production facility required by **Hydro-Québec** to supply the authorized exports, for which construction had not been authorized at the time of completion of the hearing, will have been subjected, prior to its construction, to the appropriate environmental assessment and review procedures as well as to the applicable environmental standards and guidelines in accordance with federal government laws and regulations.

On 9 July 1991 the **Federal Court of Appeal** rendered its judgement. In its decision, the **Court** considered the sections of the *National Energy Board Act* relevant to the issuance of electricity export licences. Based upon its construction of those sections, the **Court** found that the Board's jurisdiction did not extend to **Hydro-Québec's** upstream production facilities and that the Board could not therefore impose licence conditions in respect of those facilities. The **Court** struck down the impugned conditions, but ruled that the licences remained valid. In light of this decision and other recent court decisions, the Board continues to assess its environmental responsibilities under its own *Act* and under the *EARP Guidelines Order*.

Detailed Routing - Pipelines and Power Lines

Persons whose lands may be affected by the route of a pipeline or power line approved by the Board can present their views to the Board at a local public hearing. Their evidence is considered in the determination of the final detailed route of the line.

In the case of power lines, detailed routing matters are normally dealt with under provincial laws unless an applicant elects to have federal laws apply.

Socio-Economic Impact

Whenever a matter coming before the Board raises significant socio-economic issues, the Board:

- takes into account local and regional socio-economic issues in determining whether the public interest would be served in granting an approval; and
- within the scope of its jurisdiction, ensures that project applicants take all reasonable steps to minimize and/or mitigate project-induced negative impacts while at the same time enhancing positive impacts.

The Board expects project proponents to provide local and regional parties with an early opportunity to express their views on project impacts, and to take these views into account in the project design phase. Project proponents are required to identify possible adverse as well as positive impacts related to the project, and

to propose an action plan to deal effectively with the impacts. Monitoring of the success or failure of action plans is an integral part of the process, and is intended to produce remedial follow-up. Where impacts are likely to be significant, the Board would set terms and conditions as part of its approval, and would follow-up in order to ensure compliance.

Third-Party Crossing Matters

The *National Energy Board Pipeline Crossing Regulations, Part I and Part II* (the "Pipeline Crossing Regulations"), establish requirements for third-party excavation and construction activities affecting pipelines. During the three years that the regulations have been in effect the Board did not have to issue any third-party crossing approvals.

The Board continued to monitor compliance with the regulations, encourage safe construction and excavation practices near pipelines, and promote public awareness of the pipeline crossing regulations through:

- 78 detailed investigations of third-party violations reported by the pipeline companies;
- 16 random field inspections of construction and excavation activities affecting pipelines;
- audits of the crossing records of ten pipeline companies and reviews of their public awareness programs for third-party damage prevention; and
- presentations and meetings with utilities, excavators and various agencies across the country.

In March 1991, the Board revised its guide entitled *Excavation and Construction Near Pipelines* to include the amendments to section 112 of the Act concerning excavation using mechanical equipment and explosives within 30 metres of a pipeline, and the operation of a vehicle or mobile equipment across a pipeline. The guide contains a brief explanation of these additional responsibilities.

The guide was originally prepared in June 1990 to assist those involved in third-party activities that may affect Board-regulated pipelines. It includes the *Pipeline Crossing Regulations*, maps showing the general location of Board-regulated pipelines, and contact lists for Board and pipeline company staff. Approximately 2 500 English and 900 French copies of the revised guide have been distributed to pipeline companies, contractors, utility owners, technicians, consultants and other interested third parties.

Advisory Functions

Study on the Future Use of the Sarnia-Montreal Pipeline

The Board conducted a study, at the request of the **Minister of Energy, Mines and Resources**, on the future use of the Sarnia-Montreal pipeline. The pipeline, which is part of the **Interprovincial Pipe Line Company** system, transports crude oil from western Canada to refineries in Montreal.

In a letter to the Board, the **Minister** stated that a diminishing supply of light western crude oil, more economic foreign crude supply opportunities for Montreal refiners and long transit times to move oil from Sarnia to Montreal have all contributed to the uncertainty about the use of the pipeline.

As a result, the **Minister** asked the Board to advise him on the “prospects for and implications of closure of the pipeline and the options available to industry and/or government for maintaining the line in an operating mode with west-east or east-west flow”.

The Board’s report, dated April 1991, was made public by the **Minister** on 25 July 1991.

The main conclusions of the Board’s report were the following:

- Canadian crudes are now regarded by Montreal refiners as being generally uncompetitive with overseas crude, primarily as a result of long delivery times and high inventory costs; and
- There are no immediate security of supply reasons requiring government intervention to keep the crude oil pipeline operating between Sarnia and Montreal. There are sound reasons for governments not to intervene as producers determine the most economic means to dispose of domestic crude oil supply and as refiners provide for longer term access to crude oil for their refineries.

Energy Studies

Canadian Energy Supply and Demand

The Board released its update of energy projections in the June 1991 report entitled *Canadian Energy Supply and Demand, 1990 - 2010*. The report is one component of the ongoing advisory and monitoring functions for which the Board is responsible under the *National Energy Board Act*.

The projections were prepared by the Board after extensive informal consultations with governments, industry and other interested parties in Canada and the United States. A novel feature of the report was the first time inclusion of estimates of emissions of gases from the production and use of energy, including those gases linked to the greenhouse effect, acid rain and low-level ozone.

Other Energy Studies

In the latter part of 1991 the Board initiated two studies for release in 1992:

- the *Natural Gas Market Assessment* will focus on trends in the long-term contracting of Canadian gas for domestic and export markets. It is a main component of the Board's monitoring of gas markets under the Market-Based Procedure employed by the Board in considering export applications; and
- the *Export Impact Assessment* will address the impact on domestic energy and natural gas markets of additional gas exports over the next 20 years. This results of this study will help guide the Board when it considers specific export applications under the Market-Based Procedure.

Legislation and Regulations

The following section outlines changes that were made during 1991 to the *National Energy Board Act*, regulations, and rules under which the Board operates. The Board's quarterly Regulatory Agenda provides additional detail on these matters.

National Energy Board Act

Bill C2 (National Energy Board Act [Measure To Amend]) was given Royal Assent on 21 June 1991. The purpose of *Bill C2* is to give effect to the government's decision to relocate the Board from Ottawa to Calgary, Alberta.

Onshore Pipeline Regulations

The *Onshore Pipeline Regulations* specify, among other things, the requirements for the protection of property, the environment, and the safety of the public and workers during the construction, operation and abandonment of an onshore pipeline.

During 1992, the Board intends to issue proposed amendments for public review and comment. Those amendments reflect the outcome of Board-industry deliberations principally regarding the operation and maintenance of onshore pipelines. They also include improvements based on the Board's experience since the publication of the *Onshore Pipeline Regulations* in 1988.

Offshore Pipeline Regulations

Draft *Offshore Pipeline Regulations*, based on the standards of the **Canadian Standards Association**, have been developed in close cooperation with industry. The regulations are being prepared in anticipation of the development of offshore production and will address the safety and environmental protection requirements for the construction, operation and abandonment of offshore pipelines.

On 20 April 1991, the draft *Offshore Pipeline Regulations* were prepublished in *Part I* of the *Canada Gazette*. The prepublication allowed 30 days to interested parties to provide their comments on the proposal.

Following the consideration of the comments received, the regulations will be forwarded to the Minister of Energy, Mines and Resources with a request for promulgation and publication in *Part II* of the *Canada Gazette*.

Gas Plant Regulations

The Board is drafting Gas Plant Regulations to provide for the safe design, construction and operation of gas plants under its jurisdiction. These regulations will be incorporated into the *Onshore Pipeline Regulations*. The Board expects to issue these regulations for comments in 1992.

International Power Line Crossing Regulations

During 1988, on the advice of the **Department of Justice**, the Board divided its proposed International Power Line Crossing Regulations into two sets of regulations, as follows:

- *International Power Line Crossing, Construction and Abandonment Regulations*
These regulations deal with crossings by international power lines as well as each company's responsibilities to maintain crossing records, abandon crossings, and report incidents.
- *International Power Line Crossing Regulations*
These regulations deal with crossings of international power lines and set out the terms and conditions under which leave of the Board to cross such power lines need not be obtained.

The draft regulations are being examined by the Department of Justice.

Export and Import Reporting Regulations

These proposed regulations, under subsection 129(1) of the *Act*, would require persons exporting oil, natural gas, or electricity, or importing natural gas under a licence or order, to provide certain information to the Board. The information is similar to that currently required by the *Part VI Regulations*. However, on the suggestion of the Standing Joint Committee on Regulatory Scrutiny, the Board decided to remove reporting requirements from those regulations and to make new regulations. The regulations will require Governor in Council approval before taking effect.

National Energy Board Part VI Regulations

During 1991, the Board continued its review of the *National Energy Board Part VI Regulations* (the *Part VI Regulations*) to reflect changes in export regulation and changes suggested by the standing Joint Committee on Regulatory Scrutiny, including the removal of those provisions respecting export and import reporting requirements now included in the proposed *Export and Import Reporting Regulations*. The amendments will require Governor in Council approval before taking effect.

National Energy Board Rules of Practice and Procedure

The Board issued a revised draft of the *National Energy Board Rules of Practice and Procedure* on 7 May 1987 and directed all parties to use them as of that date. During 1991, the Board continued its ongoing review of these rules with the intent of further improving on the ways in which they work in practice.

The revised draft will require further examination by the Department of Justice and publication in the *Canada Gazette* before it is made final.

Legal Actions

Altamont Gas Transmission Company and National Energy Board, Northern Pipeline Agency, Foothills Pipe Lines (Yukon) Ltd., and others

In 1978 the Canadian Parliament enacted the *Northern Pipeline Act* which granted certificates of public convenience and necessity to subsidiaries of **Foothills Pipelines (Yukon) Ltd.** for the construction of the Canadian portion of the **Alaska Highway Gas Pipeline**. It was contemplated that the certificates would be used to construct the Canadian portion of a pipeline to transport Alaskan gas across Canada to the lower 48 United States. However, the certificates were subject to conditions. Condition 12 prohibited construction of the Canadian portion of the **AHGP** prior to financing for the whole of that portion of the pipeline being obtained.

Condition 12 was amended in 1980 to permit **Foothills** to prebuild certain sections of the **AHGP** in southern Canada, which were to be built to facilitate the export of surplus Canadian gas pending completion of the remainder of the **AHGP**. The amended Condition 12 provided that construction of the "prebuild" sections could proceed upon proof that financing for the prebuild sections had been obtained and that financing for the remainder of the pipeline could be obtained. After satisfying this financing condition, **Foothills** constructed certain portions of the prebuild sections.

On 31 May 1990, **Foothills** applied to the **Northern Pipeline Agency** to construct a segment of the **AHGP** in south-eastern British Columbia, which **Foothills** characterized as a further extension of the prebuild. **Altamont Gas Transmission Company** at that time was intending to apply to the Board to construct a competing pipeline. By a letter addressed jointly to the Board and the **NPA**, **Altamont** objected to the manner in which **Foothills** was pursuing its application. **Altamont** argued that the *Northern Pipeline Act* contemplated the construction of a pipeline from Alaska, across Canada to the U.S. and that the certificates issued pursuant to that Act were not intended to be used in the manner proposed by **Foothills**.

Following submissions by various parties, the **NPA** ruled that **Foothills'** application was properly before it, but that before proceeding with the project, **Foothills** would have to satisfy Condition 12. In its decision of 14 February 1991, the Board concurred with the **NPA**.

On 28 February 1991, **Foothills** applied to the Board and the **NPA** for an amendment to Condition 12, which would allow **Foothills** to construct the applied-for project without first obtaining financing for the entire Canadian portion of the **AHGP**. After considering the views of interested parties, the

Board granted **Foothills'** application and recommended to the Governor-in-Council that Condition 12 be amended accordingly.

On 20 June 1991 **Altamont** filed an application in the Federal Court Trial Division pursuant to s. 18 of the *Federal Court Act* seeking an order of the Court:

- quashing the 14 February 1991 decisions of the Board and the Designated Officer under the *Northern Pipeline Act* to the extent that the decisions determined that Addendum 4 to the System Design Report filed by **Foothills** with the **NPA** on 31 May 1990 was properly before the **NPA** under the *Northern Pipeline Act*;
- quashing the 27 May 1991 decision of the Board amending Condition 12 of *Schedule III* to the *Northern Pipeline Act*; and
- prohibiting or enjoining the Board, the Minister responsible for the **NPA**, the Designated Officer under the *Northern Pipeline Act*, et. al., from carrying out any duty or responsibility under or flowing from the *Northern Pipeline Act* in respect of a purported expansion by **Foothills** of the "pipeline" as defined in that Act and from making any finding or otherwise taking any action pursuant to the Board decision dated 27 May 1991 amending Condition 12.

Altamont argued that the certificates issued to **Foothills** under the *Northern Pipeline Act* were never intended to be used in the manner proposed by **Foothills**, and that the proposed pipeline expansion should properly be the subject of an application to the Board for a new certificate under the *National Energy Board Act*. The Federal Court set down **Altamont's** motion to be heard on 22 January 1992. However, in December 1991, **Altamont** withdrew its motion.

CNG Transmission Corporation - Blackhorse Extension

On 4 July 1991, the Board issued its decision (with reasons to follow) denying the application by **TransCanada PipeLines Limited** to construct the Blackhorse Extension.

The Blackhorse Extension was a proposal by **TransCanada** to construct 20.6 kilometres of pipeline and associated facilities for service beginning 1 November 1991. The pipeline was to extend from **TransCanada's** Niagara Line to a delivery point near Chippawa, Ontario and was estimated to cost \$42.3 million. The extension would have interconnected with the proposed Empire State Pipeline, which when constructed will serve central and western New York State.

Shortly after the Board released its decision, **TransCanada's** counsel indicated to the Board that **TransCanada** anticipated filing an application requesting the Board to review its decision. On July 29, certain parties associated with the

Blackhorse project met with the Board's Chairman, Vice-Chairman and Board Counsel. At that meeting, the possibility of the Board conducting a review of its decision was discussed.

On August 2, **TransCanada**, on behalf of itself and other parties associated with the Blackhorse project, filed an application requesting the Board to conduct a review of its Blackhorse decision. On August 9, the Board decided to abridge its usual two step review process and announced that it had been persuaded by the applicants' arguments that a review was justified.

On 30 August, **CNG Transmission Corporation** filed a motion with the Federal Court Trial Division seeking leave to appeal the Board's decision of 9 August to review its Blackhorse Extension decision. **CNG** requested the Court to quash the Board's decision to conduct a review of its Blackhorse decision and to prohibit all current Board members from participating in any subsequent review of that decision.

On 9 September, **CNG** filed a notice of Application for Leave to Appeal with the Federal Court of Appeal seeking leave to appeal the Board's decision of 9 August 1991 to review the Blackhorse decision. **CNG** filed that application to address the possibility that the Federal Court Trial Division might rule that it lacked jurisdiction to deal with **CNG's** motion. **CNG** requested that the Court not process the application for Leave to Appeal unless a ruling that the Trial Division lacked jurisdiction to deal with the motion was received.

On 18 October 1991, the Federal Court Trial Division ordered that the Board discontinue its review and that Messrs. Priddle and Fredette refrain from participating in any subsequent review that may be conducted regarding the Blackhorse decision.

TransCanada PipeLines Limited, ANR Pipeline Company, Rochester Gas & Electric Corporation and St. Clair Pipelines Limited - Blackhorse Extension

By application dated 6 August 1991 **TransCanada PipeLines Limited, ANR Pipeline Company, Rochester Gas & Electric Corporation and St. Clair Pipelines Limited** applied to the **Federal Court of Appeal** for leave to appeal the Board's Blackhorse Extension decision. The ground for appeal was that the Board had erred in law by basing its decision on a finding that was not supported by the evidence before it. In particular, the applicants cited the Board's conclusion that there were less expensive and environmentally superior means of delivering gas to the proposed markets of the Empire State Pipeline in a timely fashion. The applicants argued that this conclusion was at odds with evidence which had been adduced at the Blackhorse Extension hearing.

The applicants requested the **Court** to defer consideration of their application pending the outcome of their application for review to the Board.

Hydro-Québec, le Procureur général du Québec and the Grand Council of the Crees (of Québec) / the Cree Regional Authority (EH-3-89)

On 26 October 1990, **Hydro-Québec** and the **Grand Council of the Crees (of Québec) / the Cree Regional Authority** (jointly referred to hereafter as the "**Crees**") filed applications in the Federal Court of Appeal for leave to appeal the Board's decision of August 1990 to issue licences to **Hydro-Québec** for exports of firm electricity to the **Vermont Joint Owners** and the **New York Power Authority**.

Hydro-Québec's grounds for appeal were that the Board exceeded its jurisdiction when the Board made the licences subject to conditions that these shall remain valid to the extent that any production facility required by **Hydro-Québec** to supply the authorized exports, for which construction had not been authorized at the time of completion of the hearing, will have been subjected, prior to its construction, to the appropriate environmental assessment and review procedures as well as to the applicable environmental standards and guidelines in accordance with federal government laws and regulations. **Hydro-Québec** argued that its generation facilities are local works under the exclusive jurisdiction of the province of Québec, and thus not subject to federal regulation. **Hydro-Québec** further argued that federal regulation of its proposed production facilities would unduly duplicate Quebec's review processes and standards. The **Crees** argued that the Board erred in applying *Bill C-23*, which came into force on 1 June 1990, to the applications of **Hydro-Québec** because they were filed with the Board prior to the coming into force of *Bill C-23*. The **Crees** submitted that the Board had to apply paragraph 118(b) of the *Act* (as it read before the coming into force of *Bill C-23*) to the applications of **Hydro-Québec** and determine whether the export price was just and reasonable and in the public interest. The **Crees** argued that the Board could not make this finding as **Hydro-Québec** had filed insufficient evidence.

On 31 October 1990, the Board was served with the application of **le Procureur général du Québec** for leave to appeal. In addition to the grounds raised by **Hydro-Québec**, **le Procureur général** argued that the *Environmental Assessment and Review Process Guidelines Order* does not apply to the Crown in right of a province and that the provisions of paragraph 119.06(2)(b) of the *Act* directing the Board to have regard to the environmental impacts of electricity exports are unconstitutional.

On 28 November 1990, the Federal Court of Appeal granted the applications of all three appellants for leave to appeal.

Le Procureur général, Hydro-Québec and the **Crees** filed their notices of appeal on 7, 10, and 18 December 1990, respectively.

The appeals were heard in Montreal from 10 to 14 June 1991. The Court denied the **Cree's** appeal and allowed those by **le Procureur général** and **Hydro-Québec**.

In its decision the Court first considered the Board's power to make **Hydro-Québec's** export licences subject to environmental conditions pertaining to upstream production facilities. The Court found that the Board could only impose such conditions if its jurisdiction could be said to extend to such production facilities. In answering this question the Court looked to the *National Energy Board Act*, and - in particular - to the definition of "export" contained in that Act. (Section 2 of the Act defines "export" to mean - with reference to power - to send from Canada by a line of wire or other conductor power produced in Canada.) The Court found that the export of power and the production of power are two distinct activities. As the Board's mandate under the Act is limited to considering the export of power, the Court held that the Board lacked the necessary statutory authority to impose conditions in respect of upstream production facilities. On that basis, the court ruled that the Board exceeded its jurisdiction in including the two environmental conditions in **Hydro-Québec's** export licences.

The Court concluded that, as the two impugned conditions could be disassociated from the licence, and there was nothing in the Board's *Reasons for Decision* to suggest that, within the limits of its jurisdiction, the Board had reasons for refusing to grant **Hydro-Québec's** application, that the quashing of the conditions should not result in a quashing of the Board's entire decision.

The Court next considered the arguments raised by the **Crees**. The Court ruled the **Crees'** argument that the Board had incorrectly applied *Bill C-23* in considering **Hydro-Québec's** export application failed on two grounds. First, the Court found that the Board was correct in applying the procedural aspects of *Bill C-23* to **Hydro-Québec's** application, in that such practice was consistent with the general principles of statutory construction. The **Crees** had also argued that the application of *Bill C-23* to **Hydro-Québec's** application constituted a breach of the rules of natural justice. The Court dismissed this argument, noting that the **Crees** had complete latitude at the hearing to act on their clear understanding that the coming into effect of *Bill C-23* could affect the decision rendered.

Finally, the Court ruled that, in any event, the **Crees'** argument vis-a-vis *Bill C-23* led nowhere as, in making its decision, the Board had employed pre-*Bill C-23* criteria in assessing **Hydro-Québec's** application. On that basis, the Court concluded the **Crees Bill C-23** argument to be untenable.

The Court then went on to consider the **Crees'** second ground of appeal. In making its decision the Board made a finding that the proposed export price was just and reasonable, and that it would recover an appropriate share of costs incurred in Canada. On appeal, the **Crees** argued that the Board could not have validly arrived at such a conclusion as it had no "direct" evidence on this matter before it. The Court found that there was no requirement that the Board base its conclusion upon direct evidence exclusively. The Court noted that, at the original export licence hearing, the Board had before it the testimony of a series of witnesses and the abundant documentary evidence submitted by **Hydro-Québec** on the question of profitability. It also had before it evidence

that the **Government of Québec** had approved the export contract because of the clear benefit the province would derive from it. The Court concluded that the evidence, while not all direct, carried a strong persuasive force. The Court found that the Board had been persuaded by the evidence, and did not see a basis upon which it could undertake to dispute the Board's conclusion. The Court also noted that courts have historically been hesitant to dispute findings of fact made by administrative tribunals.

On 30 October 1991, the **Crees** and the **Cree Regional Authority** filed an application for leave to appeal with the Supreme Court of Canada.

Prophet River Indian Band - Adsett Pipeline

In conjunction with the commencement of the GH-6-90 public hearing to consider an application by **Westcoast Energy Inc.** respecting the Adsett pipeline project, the Board issued an "Environmental Screening Document" prepared pursuant to the *Environmental Assessment and Review Process Guidelines Order* ("EARP Guidelines Order"), which contained the Board's findings concerning the initial assessment of the Adsett project as required by the *EARP Guidelines Order*. On 11 April 1991, the **Prophet River Indian Band** applied to the Board by Notice of Motion pursuant to Section 21(1) of the *National Energy Board Act* for a review of those findings.

On 13 May 1991 the Board denied the application for review by the Band on the basis that the *EARP Guidelines Order* does not contain a provision authorizing an initiating department to review its screening findings. Nor did the Board think that it was open to the **Band** to utilize the statutory authority of the *National Energy Board Act* to review the Environmental Screening Document, which was created pursuant to the *EARP Guidelines Order*. On 11 June 1991, the **Band** sought leave to appeal from the Federal Court of Appeal the Board's decision denying its application for review.

Subsequent to the filing of the Notice of Motion for leave to appeal, interested parties were requested to file written submissions with the Federal Court.

TransCanada PipeLines Limited / Western Gas Marketing Limited and Niagara Mohawk Power Corporation - Gananoque Extension

On 18 March 1991, the Board released its decision (with reasons to follow) denying an application by **TransCanada Pipelines Limited** to construct the Gananoque Extension.

The Gananoque Extension application contemplated the construction of a pipeline which would run south from **TransCanada's** mainline just east of Kingston, Ontario, south across the St. Lawrence River to upper New York State.

There it would connect with a pipeline which would in turn connect with the **Niagara Mohawk Power Corporation** gas distribution system.

On 17 April 1991 **Niagara Mohawk** and **TransCanada/Western Gas Marketing Limited** each filed a notice of motion with the Federal Court of Appeal for an order granting them leave to file an application for leave to appeal 30 days following the release of the Board's Reasons for Decision in GH-4-90.

Niagara Mohawk and **TransCanada/WGML** made this motion to preserve their rights of appeal. In the absence of the order sought, it is arguable that the 30-day limitation period provided for in subsection 22(1.1) of the *Act* would have expired 30 days following the release on 18 March 1991 of the Board's GH-4-90 Decision with reasons to follow.

The Board released its GH-4-90 Reasons for Decision on 20 June 1991. By letter dated 17 January 1992, **TransCanada** withdrew its motion. By letter dated 20 January 1992, **WGML** withdrew its motion. By letter dated 4 February 1992, **Niagara Mohawk** withdrew its motion.

Trans-Northern Pipelines Inc. - Relocation of Pipeline at St. Eustache Mall

In March 1991, **Trans-Northern Pipelines Inc.** filed a notice of motion with the Federal Court of Appeal for leave to appeal the Board's decision of 11 February 1991. That decision affirmed Order MO-22-89 of 21 December 1989, which ordered **Trans-Northern** to relocate a section of pipeline located under the St. Eustache Mall. **Trans-Northern** sought the determination of the following two issues:

- whether the Board had jurisdiction under subsection 48(1) of the *National Energy Board Act* to order the relocation of a pipeline; and
- whether the Board erred in law or exceeded its jurisdiction in making its 21 December 1989 decision, in that there was no evidence before it indicating a material change in facts or circumstances since the time the Board originally approved the construction of the pipeline in 1967.

On 16 May 1991 the Federal Court of Appeal heard the motion orally and on the same day dismissed **Trans-Northern's** application for leave to appeal.

Treaty 8 Tribal Association and the Doig River Indian Band - British Columbia/Alberta Border Crossings

On 10 January 1991 the **Treaty 8 Tribal Association** and the **Doig River Indian Band** filed a notice of motion with the Federal Court to Appeal for leave to appeal the Board's decision of 13 December 1990 to approve an application by **Canadian Hunter Exploration Ltd.** to construct three 1 363 metre segments of interprovincial pipeline spanning the British Columbia/Alberta border.

The first ground for appeal was that the Board had denied the two groups procedural fairness by not providing them with an opportunity to comment on **Canadian Hunter's** 6 November 1990 reply to the comments previously made by the **Treaty 8 Tribal Association** and the **Doig River Indian Band**. The second ground of appeal was that the Board failed to provide a public hearing to the applicants whose constitutionally protected treaty rights could not be affected without such a hearing.

On 2 May 1991 the Federal Court of Appeal granted the **Treaty 8 Tribal Association** and the **Doig River Indian Band** leave to appeal the Board's 13 December 1990 decision.

The appeal is expected to be heard in early 1992.

Frontier Oil and Gas

Introduction

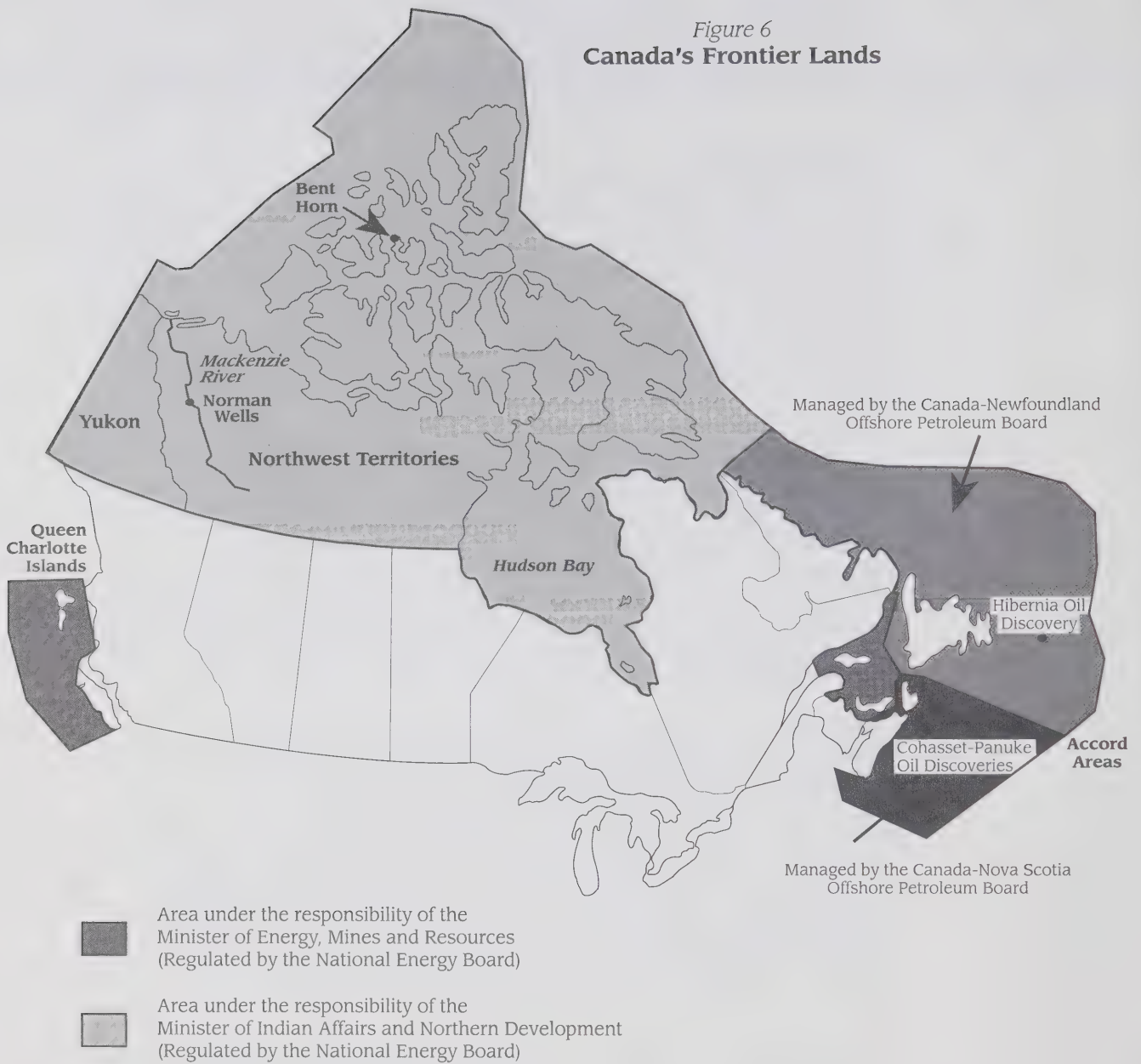
With the disbandment of the **Canada Oil and Gas Lands Administration**, the National Energy Board has acquired new responsibilities - which are distinctly different from the Board's traditional regulatory responsibilities - for oil and gas operations on a portion of Canada's frontier lands. These encompass the regulation of exploration for oil and gas, and the development and production of oil and gas resources in a manner that promotes worker safety, protects the environment and conserves hydrocarbon resources.

The Board's jurisdiction for frontier activities applies to a portion of Canada's frontier lands. The Federal Government has joint responsibility with the **Provinces of Newfoundland and Labrador** and **Nova Scotia** for oil and gas activities offshore of much of the east coast of Canada, exercised through the **Offshore Petroleum Boards**. A similar joint management regime is contemplated for the North, but not until the Northern Accord is in place. However, for the time being, the Federal Government retains sole responsibility for oil and gas activities in areas not subject to accords, that is, north of 60°, in Hudson Bay, parts of the Gulf of St. Lawrence and for West Coast waters beyond provincial jurisdiction.

For the National Energy Board to assume decision-making authority in non-Accord areas, legislation which presently governs the regulation of oil and gas activities - the *Oil and Gas Production and Conservation Act* ("OGPCA"), the *Canada Petroleum Resources Act* and the *National Energy Board Act* - needs to be amended. Until the legislative amendments are passed, regulatory approvals will continue to be formally authorized by the Chief Conservation Officer, appointed under the provisions of the OGPCA on behalf of the **Minister of Energy, Mines and Resources** (for activities south of 60°) and the **Minister of Indian Affairs and Northern Development** (for activities north of 60°) with the advice and assistance of the National Energy Board on technical matters.

The regulatory review process starts with an environmental assessment on each project in accordance with the *Environmental Assessment and Review Process Guidelines Order* ("EARP Guidelines Order"). The responsibility for safety, environmental protection and resource conservation is exercised through individual authorizations for each activity, such as geophysical surveys, drilling programs and development plans, and related studies. During the regulatory process a technical assessment is conducted by Board staff who consider geological, geophysical engineering, environmental and resource conservation factors, contingency plans and financial liability regimes. The objective of this assessment is to enhance worker safety, minimize risks to the environment and

Figure 6
Canada's Frontier Lands



ensure that the activity can be and is performed in a technically appropriate manner that adheres to sound conservation practices. Subsequently, any recommendations or conditions resulting from the assessment are incorporated in the regulatory approval. After operations begin, inspections of northern activities are conducted by the Board from the Board's Yellowknife office to enforce the provisions of the technical and safety regulations promulgated under the *OGPCA* and the *Canada Labour Code*. Inspections of environmental measurement, observation and forecasting facilities are conducted by staff from the headquarters office for Accord areas of the east coast as well as elsewhere on frontier lands.

Other Board activities related to frontier oil and gas include: estimation of discovered and potential hydrocarbon resources; evaluating and assessing field performance; providing a repository for reports and materials submitted by industry; fostering research programs to develop the knowledge base required to discharge regulatory responsibilities; and providing technical and environmental advice to the **Ministers of Energy, Mines and Resources** and **Indian Affairs and Northern Development**.

The Board assesses the environmental effects of all proposed activities in waters under joint management as well as elsewhere on frontier lands. Responsibility for observing the provisions of the *Environmental Assessment and Review Process* for oil and gas activities on all frontier lands is also undertaken by the Board, as well as for projects by the **Environmental Studies Research Fund ("ESRF")** and the **Program on Energy Research and Development ("PERD")**. The Board also manages and promotes research funded by **ESRF** and **PERD**.

Federal - Provincial - Territorial Arrangements for the Management of Frontier Lands

Yukon and Northwest Territories

Rights management in the North is now the responsibility of the **Northern Oil and Gas Directorate** of the **Department of Indian Affairs and Northern Development**. The Board provides advice on matters which relate to terms and conditions for land issuance, such as geological potential, operational constraints and the environment. Environmental assessment of the areas under consideration for land issuance is carried out by the Board.

The 1991 round of land issuance in the Mackenzie Delta-Beaufort Sea was completed on 25 November when bids were opened for four parcels. Successful bids were announced by the **Minister of Indian Affairs and Northern Development** on 9 December. The three parcels on the Mackenzie Delta - the first to be issued onshore in 25 years - attracted a combined total bid of \$53.3 million from **Shell Canada**. The fourth parcel in the central Beaufort Sea was awarded to a consortium led by **Chevron Canada Resources** and **Amoco Canada Petroleum Company Ltd.**. A parcel offered on Cameron Island in the Arctic Islands earlier in the year failed to attract bids.

Non-confidential geological, geophysical and engineering data relating to exploration in the Territories may be viewed at Board headquarters in Calgary and in the Board's Yellowknife office. Drilling samples and core from exploratory wells are stored and available for viewing at the **Institute of Sedimentary and Petroleum Geology** in Calgary.

Nova Scotia

Oil and gas activities offshore of Nova Scotia are regulated by the **Canada-Nova Scotia Offshore Petroleum Board ("CNSOPB")**. Staff of the National Energy Board review the environmentally significant effects of proposed activities in these areas on behalf of the **Minister of Energy, Mines and Resources** and provide technical advice to the Minister and the **Canada-Nova Scotia Offshore Petroleum Board** on request.

The Dartmouth curation and laboratory facility, originally part of the **Canada Oil and Gas Lands Administration**, is now the joint responsibility of the **Canada-Nova Scotia Offshore Petroleum Board** and the **Department of Energy, Mines and Resources**.

With the concurrence of the **Canada-Nova Scotia Offshore Petroleum Board** non-confidential geological, geophysical and engineering data for the Nova Scotia offshore may be viewed at the National Energy Board headquarters in Calgary.

Newfoundland and Labrador

Oil and gas activities in waters around Newfoundland and offshore of Labrador are regulated by the **Canada-Newfoundland Offshore Petroleum Board**. Staff of the National Energy Board review the environmental significance of proposed activities in these areas on behalf of the **Minister of Energy, Mines and Resources** and respond to requests for advice from the Minister and the **Canada-Newfoundland Offshore Petroleum Board** on other technical and engineering matters.

During 1991, the Board participated in the environmental monitoring of the Hibernia project through its membership on the **Hibernia Construction Site Environmental Management Committee** and its involvement in the **Energy, Mines and Resources** Hibernia Monitoring Program.

Exploration Activity on Frontier Lands

A total of 14 wells were drilled to total depth on Canadian frontier lands in 1991: nine of these wells were drilled north of 60° on frontier lands for which the National Energy Board now has regulatory responsibilities; three wells were drilled off the coast of Nova Scotia, and two wells in the Jeanne d'Arc Basin on the Grand Banks of Newfoundland.

The East Coast

Activity off the Nova Scotia coast centered around the Panuke-Cohasset development project, operated by **LASMO Nova Scotia Limited**. The Panuke J-99 PP1 well was completed from the J-99 production platform location and three additional production wells were commenced and suspended at shallow depth, to be completed early in 1992. Lawrence D-14 was drilled 8 kilometres north of Cohasset and abandoned early in 1991 as a dry hole. A second exploratory well, Balmoral M-32, was subsequently drilled on a separate closure close to the Panuke Field and discovered additional developable oil reserves for the Panuke-Cohasset project. Two seismic programs were shot in the vicinity of Panuke-Cohasset by **Nova Scotia Resources Ltd.** and by **LASMO**.

Exploration drilling from the semi-submersible M.V. *Treasure Searcher* in the Jeanne d'Arc Basin east of Newfoundland involved the drilling of two wells, BP et al. Thorvald P-24 and Mobil Oil Canada Properties Botwood G-89. Neither resulted in a discovery and both were subsequently abandoned.

Several geophysical parties were active off both the east and west coasts of Newfoundland. In the Jeanne d'Arc Basin, the Hibernia Development Company completed a large three-dimensional seismic program over the Hibernia field, and a site survey was conducted for **Mobil** at the Botwood wellsite. Four programs were conducted off the west coast of Newfoundland, three to evaluate offshore exploration licences issued by the **Canada Newfoundland Offshore Petroleum Board** in 1990, and a fourth to complete a speculative survey.

The North

In 1991 nine wells comprising four exploratory, four delineation and one production well were drilled in the Northwest Territories and the Yukon.

Geophysical operations were significantly reduced compared with 1990, due to lack of any activity in the Beaufort Sea. There was limited activity in the Mainland Territories.

Mackenzie Delta-Beaufort Sea

For the first time in many years, no offshore wells were drilled in the Beaufort Sea. One onshore exploratory well, Esso Tuk E-20, was drilled near

Tuktoyaktuk. The well was drilled to a total depth of 3 173 m then plugged and abandoned as a dry hole.

Geophysical activity decreased dramatically compared to 1990 with no regional or site surveys in the offshore. **Shell Canada** conducted one three-dimensional seismic program on the Mackenzie Delta, which covered 74 square kilometres over the Unipkat discovery. This interest in the onshore delta was apparent in December when **Shell** announced a substantial drilling program on new exploration licences acquired in the 1991 call.

Mainland Territories

Of the eight wells drilled and terminated in the Mainland Territories in 1991, three were exploratory, four were delineation wells and one was placed on production.

Chevron Canada Resources Ltd. drilled two exploratory wells near Fort Good Hope in the Mackenzie Valley at Sperry Creek N-58 and Ramparts River F-46. The wells were drilled to total depths of 2 160 m and 1 510 m respectively and subsequently plugged and abandoned.

Paramount Resources concentrated its drilling program in the Cameron Hills area. The year concluded with five wells drilled to total depth. Cameron B-25, an exploratory well commenced in 1990, was re-entered, drilled to 1 649 m and suspended as an oil and gas well. Four delineation wells were drilled with the following results: Cameron C-19 and Cameron M-73 reached 1 673 and 1 657 m respectively and were successful oil and gas wells; Swede G-21 reached 1 652 m and was completed as an oil well; while Swede A-52 was plugged and abandoned at a total depth of 1 610 m.

Paramount also re-entered eight previously drilled Cameron Hills wells to conduct further testing. Cameron J-62, I-16, B-08, C-50, N-28, A-68 (gas wells) as well as Cameron J-37 and M-73 (oil and gas wells) were tested then plugged and suspended.

In the southeastern corner of the Yukon Territory, **Columbia Resources** re-entered Kotaneelee I-48, tested and later plugged and abandoned the well. Kotaneelee I-48A was later sidetracked from the I-48 well-bore, drilled to a total depth of 3 915 metres and completed as a production well.

Geophysical activity increased marginally in 1991 with three seismic programs conducted. In the Fort Norman area, **Chevron Canada Resources** acquired 242 kilometres of seismic with gravity measurements, part of a vibroseis program by **Mobil Oil Canada** crossed the border from British Columbia into the Northwest Territories, and **Esso Resources** acquired vibroseis data on the ice of the Mackenzie River at Norman Wells.

Two field geology programs took place in the Yukon: **Arco Alaska Inc.** extended a field program from the United States border into the northern Yukon and **Chevron Canada Resources** undertook a field study in Eagle Plain.

***Arctic Islands, Eastern Arctic, Hudson Bay, Gulf of St. Lawrence
and West Coast Offshore***

In the High Arctic, **Panarctic** re-entered five of its previously suspended gas wells. In the Drake field, Drake Point I-67 and Drake F-16 were secured for long-term suspension. In the Hecla field, Hecla F-62 and E. Hecla C-32 were secured for long-term suspension, while Hecla I-69 was tested then plugged and abandoned.

Seismic operations in the Gulf of St. Lawrence were confined to waters under the jurisdiction of the **Canada-Newfoundland Offshore Petroleum Board**.

Waters off the west coast of British Columbia and in Hecate Strait continue to be a federal responsibility. A moratorium on petroleum exploration is in effect pending the implementation of recommendations of the **West Coast Offshore Exploration Environmental Assessment Panel** and a renewal of negotiations on the Western Accord.

Resource Evaluation Activities

Evaluation of Hydrocarbon Potential

New exploration results from northern seismic and drilling operations were evaluated and contributed to continuing studies of potential in the Southern Territories, Mackenzie Corridor, Peel Plateau, the Mackenzie Delta and the Beaufort Sea. These studies are the basis for advice on the hydrocarbon potential and relative prospectivity of northern lands to government and local groups. The opinion of Board staff was solicited by the **Northern Oil and Gas Directorate** of the **Department of Indian Affairs and Northern Development** on technical matters relating to prospect size and distribution in areas being considered for Calls for Nominations, on operating practice and on costs for geophysical surveying in the North.

As part of the Board's continuing involvement with the hydrocarbon resource assessment function of the **Geological Survey of Canada**, geological parameters were contributed to the Western Canada Gas Assessment for gas plays north of 60° and anticipatory studies for an oil and gas assessment of the Mackenzie Corridor continued. The Board also reviewed hydrocarbon prospectivity in the proposed Bluenose Lake National Park as part of a Mineral and Energy Resource Assessment and completed a report on the Old Crow Basin in the northern Yukon which was used in evaluating proposals for national parks and hydrocarbon resource potential by the **Departments of the Environment and Indian Affairs and Northern Development**.

Developments relating to the evaluation of lands under the management of the **Offshore Petroleum Boards** were monitored, fostering an understanding of oil and gas potential across the entire frontier lands. Based on this broad overall view, the **Minister of Energy, Mines and Resources** was advised on the implications of an assessment of the resource potential of the Jeanne d'Arc Basin on the Grand Banks released by the **Geological Survey of Canada**.

Recommendations on Significant Discovery Areas

Evaluation studies were undertaken to assist in determining areas for three Significant Discoveries in the Beaufort Sea. A recommendation on Significant Discovery Area at Esso PCI-Home et al. Isserk I-15 was made to the **Department of Indian Affairs and Northern Development**. Work continues on Nipterk P-32 and Kingark J-54.

The Board reviewed technical recommendations made by the Oil and Gas Committee on the Significant Discovery Area for the Minuk I-53 well in the Beaufort Sea.

Conservation and Development

Mainland Territories

Norman Wells

Waterflood performance from the Norman Wells field continued to show slight improvement over that of the previous year. Oil production for 1991 was 1.894 million m³, an increase from 1.841 million m³ in 1990. The peak daily average oil production of 5 334 m³ per day occurred during the month of April. As of 31 December 1991, the cumulative oil production for the field reached 15.886 million m³. Gas production increased slightly from 126 million m³ in 1990 to 130 million m³.

Facility changes included the addition of water injection pumps plus the upgrading of the existing pumps to expand the water injection capacity. Work on the slop oil naturalization tank continued, with installation expected in 1992. Other field activities included the expansion of the field automation system, modifications to the water injection lines and repairs to the artificial island and causeways to maintain their original design profiles.

At year end the well count was established at 165 producers and 156 injectors.

Kotaneelee

The Kotaneelee gas field operated by **Columbia Gas Development of Canada Ltd.** previously produced gas intermittently from February 1979 to November 1980. The facilities were mothballed and the wells suspended in 1983. In 1990 the operator applied for and received approval to amend the Kotaneelee Development Plan which included the upgrading of the facilities and workovers on the wells Columbia et al. Kotaneelee YT I-48 and B-38. Kotaneelee YT I-48 had to be abandoned, while YT I-48A was sidetracked and drilled to total depth. The field was placed back on production in February 1991. Total production for 1991 was 227.2 million m³ with the cumulative production for the field being 272.7 million m³.

Pointed Mountain

Addition of gas compression and dehydration units at the wellheads was responsible for a slight production increase from the Pointed Mountain gas field. Gas production in 1991 was 90 million m³ compared to 74 million m³ in 1990. Cumulative production to 31 December 1991 reached 8.405 billion m³.

Cameron Hills

Paramount Resources Ltd. submitted a Development Plan for the Cameron Hills oil field, which involved an initial testing and delineation drilling phase, followed by a pilot project contingent on early results and culminating in full-scale development should production warrant. The development plan is under review.

Arctic Islands

Bent Horn

Panarctic Oils Ltd. made one shipment of crude from its Bent Horn oil field on Cameron Island, N.W.T.. The M.V. *Arctic* left for Montreal with 24 579 m³ of oil on 21 August 1991 and returned in September; however, the tanker was unable to load a second shipment due to adverse ice conditions.

Total field production for 1991 was 32 556.9 m³, bringing the total cumulative crude oil production at Bent Horn to 256 816 m³. There is presently 20 453 m³ of oil in storage at the Bent Horn facility, of which 3 130 m³ is stored in bladders.

Panarctic had submitted documentation in 1990 to amend its Bent Horn Development Plan to include the use of a winter road from the Bent Horn site to Rea Point. Approval of this project would allow **Panarctic** to produce 18 200 m³ during the winter, transfer the oil via truck over an ice road to storage at Rea Point and allow the oil to be shipped in the summer open water season via tanker to market. The Development Plan amendment was approved. However, additional information was requested prior to the issuance of an amendment to the Production Operations Authorization. Additional documentation has been submitted by **Panarctic** and, if approved, the start up date for this project is expected to be the winter of 1993.

Legislation and Regulations

OGPCA Safety Amendments

In 1991 the Board in consultation with the **Department of Energy, Mines and Resources**, the **Nova Scotia** and **Newfoundland Departments of Natural Resources**, and the **Canada-Newfoundland** and **Canada-Nova Scotia Offshore Petroleum Boards** finalized proposed safety amendments to the *Oil and Gas Production and Conservation Act* and the related Accord legislation. The amendments are the final measures required to implement the remaining recommendations of the Royal Commission on the *Ocean Ranger* Marine Disaster. The amendments will improve the protection of the worker through a number of measures related to the assessment of installations and equipment and the training of personnel. One of the most significant recommendations requires that the installations and equipment be assessed and verified for compliance with regulations and for their fitness for purpose by a recognized certifying authority. In addition, the Board undertook an environmental assessment of the proposed amendments on behalf of the **Minister of Energy, Mines and Resources**.

Geophysical

The draft *Canada Oil and Gas Geophysical Regulations* for all geophysical operations on lands under federal jurisdiction are being reviewed by the federal Justice Department. Promulgation is expected in 1992, with the offshore Newfoundland and offshore Nova Scotia versions following shortly thereafter.

Drilling

The Board is assisting in the preparation of the Accord versions of the *Drilling Regulations*. The Newfoundland version is awaiting ministerial signature and will be published in *Part II* of the *Canada Gazette* in the near future. The Nova Scotia version was published in *Part I* of the *Canada Gazette* on 7 December 1991. Consequential amendments are being made to the Canada version of the drilling regulations. These amendments will incorporate reference to the *Installation* and the *Certificate of Fitness Regulations* and include some amendments to reflect certain modifications to the Accord versions. These regulations ensure that all measures affecting the safety of human life, the protection of the environment, and the conservation of hydrocarbon resources meet stringent standards before approval to drill is granted by the regulator.

Occupational Safety and Health

The Board is assisting in the preparation of the Accord versions of the *Occupational Safety and Health Regulations*. The drafting of the Newfoundland version of the regulations is near completion and should be ready for transmittal

to the **Department of Justice** in 1992. The Nova Scotia version, which will be similar to the Newfoundland version, should also be ready for transmittal to the **Department of Justice** in 1992. The regulations set out the measures and procedures that the industry must implement to ensure a safe and healthy workplace.

Production & Conservation

The Board is assisting the **Department of Energy, Mines and Resources** in preparing the Newfoundland and Nova Scotia versions of the *Canada Oil and Gas Production and Conservation Regulations*. The verification of the French translation of these regulations is nearing completion and the documents will be sent to the **Department of Justice** in 1992 for review. These regulations will cover the procedures and approvals for the orderly and efficient development and production of oil and gas discoveries in offshore Accord areas.

Due to the disbandment of the **Canada Oil and Gas Lands Administration** and its partial integration with the National Energy Board, the proposal to publish the Development Plan Application Guidelines under the *Canada Oil and Gas Production and Conservation Regulations* has been delayed until 1992.

Installations

The Canada and Accord versions of the *Installation Regulations* have been drafted in consultation with the **Department of Energy, Mines and Resources**, the **Nova Scotia** and **Newfoundland Departments of Natural Resources**, and the **Canada-Newfoundland** and **Canada-Nova Scotia Offshore Petroleum Boards**. These regulations establish the minimum technical requirements that must be adhered to in the design, construction, installation, inspection, operation, maintenance and repair of an installation. The draft regulations will be submitted to the **Department of Justice** early in 1992.

Certificate of Fitness

The *Certificate of Fitness Regulations* have been drafted and the French translation has been verified. These Regulations are part of the certification process that was recommended by the *Ocean Ranger* Commission and in the subsequent Harrison Task Force Report. The Regulations contain a listing of organizations approved to act as a certifying authority and the procedures for the issuance of a Certificate of Fitness. They also specify the minimum scope of work to be carried out by the certifying authority. The *Installation Regulations*, the *Certificate of Fitness Regulations* and the consequential amendments to the *Drilling, Diving and Production and Conservation Regulations* will be submitted to the **Department of Justice** early in 1992.

Diving

In 1991, expert assistance was provided by the Board to the **Marine Investigations Branch** of the **Department of Transport** with the underwater search, examination and salvage of two sunken vessels. **The Canada-Nova Scotia Offshore Petroleum Board** was also assisted with Diving Program Approvals and on site inspection and certification of diving personnel.

The diver certification process is a continuing activity and, as in previous years, a number of applications were processed from divers and dive-related personnel seeking certification under the *Canada Oil and Gas Diving Regulations*. To date, over two hundred individuals have been either certified or recertified under one of nine categories of specialization prescribed in the regulations. In addition, the **Institut Maritime de Québec** and **Seneca College of Applied Arts and Technology** were examined and subsequently approved as training centres for divers.

Amendments to the *Canada Oil and Gas Diving Regulations* and the draft *Nova Scotia Offshore Petroleum Diving Regulations* passed the **Department of Justice** examination and are being promulgated.

Canadian Standards Association

Board staff serve on the **Canadian Standards Association** Steering Committee for the development of the new **CSA Code for the Design, Construction and Installation of Fixed Offshore Structures**; its five technical committees, several subcommittees, and various related working groups. The development of the standards incorporated a modern approach to the design of offshore structures in that the design process is based on the "limited states" methodology. This approach to design has been coupled with an emphasis on specific conditions related to the Canadian environment such as low temperature, ice loading and unique structural type.

In connection with the development of this new Code, a major verification program was instituted. The verification program consists of two principal components: a requirement for expert review and comment on the five Preliminary Standards which constitute the Code, and a series of verification studies specifically designed to calibrate and/or verify the technical requirements contained in the Preliminary Standards.

During 1991 the verification studies approved by the **CSA Design Verification Subcommittee** dealt principally with the appraisal of uncertainties associated with the modelling techniques and the databases used to develop design criteria. Additionally the subcommittee reviewed the evaluation or verification of the adequacy of the technical requirements applied to the design of structural elements and components that comprise full-scale off-shore steel and concrete structures. These studies have confirmed that the Preliminary Standards provide a consistent, coherent design approach and that they are now suitable and ready

for use by designers of offshore platforms. Formal standards will be published by the **CSA** near the end of 1992.

Inspections

The Board inspected exploration and production sites to ensure that operations were conducted according to approved program and regulatory requirements. In 1991 seventeen drilling, seven production and two seismic inspections were conducted. In addition, fifteen suspended well locations were inspected.

The Board also inspected ice and iceberg, sea-state and weather measurement, observation and forecasting facilities to ensure compliance with regulatory requirements. In 1991 three forecasting facilities were inspected and the Board provided advice on physical environmental requirements for drilling activities to the **Canada-Nova Scotia** and **Canada-Newfoundland Offshore Petroleum Boards**, other government agencies, oil operators and contractors.

Lost-Time Accidents

In 1991 a total of five lost-time accidents were reported for the non-Accord frontier lands, two of which occurred at drill sites, two at production sites and one during a geophysical operation. There were no fatalities associated with oil and gas activities on the non-Accord frontier lands during the year.

Protection of the Environment

The frontier lands environmental mandate of the National Energy Board arises from regulatory responsibilities under the *Oil and Gas Production and Conservation Act*, the *Canadian Petroleum Resources Act*, the *Arctic Waters Pollution Prevention Act* and the *Environmental Assessment and Review Process Guidelines Order*. New environmental legislation (the *Canadian Environmental Assessment Act*), which will affect the role of the National Energy Board in its environmental assessment responsibilities, is expected in 1992.

In addition to responsibilities for environmental assessment of all oil and gas activities on Frontier Lands, the Board is responsible for regulatory administration, management of research and development activities and provision of technical expertise as appropriate to the **Minister of Energy, Mines and Resources**, the **Department of Indian Affairs and Northern Development**, and the **Canada-Nova Scotia** and **Canada-Newfoundland Offshore Petroleum Boards**.

To fulfill its obligations to promote the safety of oil and gas exploration and development activities in harsh environments and to protect the environment from these operations, the Board conducted a wide range of activities related to *EARP* and regulatory enforcement during 1991 under the aegis of the **Canada Oil and Gas Lands Administration** and the new Environment Directorate in the Board. In addition, through the **Panel of Energy Research and Development ("PERD")** and the **Environmental Studies Research Fund ("ESRF")**, the Board initiated, promoted and managed research and development required for environmental regulatory approvals of oil and gas activities and for the improvement of Canada's expertise in the oil and gas industry. They also consulted with federal, provincial and territorial government agencies, with industry, and the academic community in carrying out these responsibilities and establishing research program priorities.

East Coast

In response to a request by the **Department of Energy, Mines and Resources ("DEMR")** on behalf of the Minister, the Board developed and implemented a system for monitoring the status of responses to the recommendations of the *Report of the Environment Assessment Panel on the Hibernia Project Development*. Reports on the status of the responses were presented to the **DEMR** upon request.

The Board advised officials of the **DEMR** and the **Province of Nova Scotia** on the environmental requirements of the Richmond Terminal Access Road. They also participated in discussions with the **Canada-Nova Scotia Offshore Petroleum Board** and the **Department of the Environment** on methods to treat produced water from the Cohasset-Panuke development project.

Environmental assessments and reviews for regulatory approvals were conducted for one Drilling Program Approval (off Nova Scotia), four Authorities to Drill Wells (three off Nova Scotia and one off Newfoundland), one Authority to Conduct a Geophysical/Geological Program (off Nova Scotia), and two Offshore Development Fund projects (one in Newfoundland and the other in Nova Scotia).

The North

Beaufort Sea Drilling Operation Review

In September 1990, the **Beaufort Sea Steering Committee** was formed by the **Minister of Indian Affairs and Northern Development** to assess the concerns of the **Environmental Impact Review Board ("EIRB")** regarding government preparedness for an oil spill resulting from an oil well blowout in the Beaufort Sea. The Steering Committee was made up of representatives from the Inuvialuit, the Board, the petroleum industry, the territorial governments and the federal government, who have a direct interest in the management of exploration activity in the Beaufort Sea.

The Steering Committee reviewed the work of seven task groups set up to examine:

- government contingency plans for an oil well blowout;
- same season relief well capabilities;
- contingency plan testing and review;
- Inuvialuit involvement in contingency planning and cleanup operations;
- the costing of counter-measures and the development of a worst case scenario;
- compensation and financial liability;
- the nature and cost of remedial and mitigative measures possible in the Beaufort Sea;
- scientific processes relating to research to be undertaken in the event of a spill; and
- assessment methodology and databases.

Board staff chaired the Task Groups for 'Operating Seasons' and 'Worst Case Scenario', and participated in Task Groups on 'Remedial and Mitigative Measures', 'Compensation and Financial Responsibility', 'Research and Scientific Study', and 'Government Management'. The Board also provided input to the task group on 'Contingency Plan Testing'.

The report of the Steering Committee was presented to the **Minister of Indian Affairs and Northern Development** in April and listed 33 recommendations relating to concerns examined by the task groups. It is a comprehensive report comprising eight volumes. The National Energy Board is identified as the lead agency in responding to 14 of the 33 recommendations of the Committee. The Board participated in the Workshop on Implementation of the Recommendations in September and will be consulting with other Committee participants in putting the recommendations into effect.

While the **Beaufort Sea Steering Committee** was preparing its recommendations, the environmental review of the *Gulf Kulluk Drilling Program Approval* continued in consultation with the **Department of Fisheries and Oceans** and the **Arctic Waters Advisory Committee** to determine environmental conditions for the Program. This review was terminated when **Gulf** withdrew its application.

The Board reviewed two **Panarctic** proposals: one for over-ice trucking of crude oil from Bent Horn to Rea Point, and the other for over-wintering of crude in the bladder farm at the Bent Horn production site. The over-ice trucking project was proposed to ensure that a minimum of two oil shipments per year could be transported from **Panarctic's** production site at Bent Horn. The project was approved subject to the construction of berms around loading and unloading areas, and an acceptable contingency plan being in place. The work is expected to proceed in 1993. The project for storing the crude oil in bladders over the winter at Bent Horn arose from ice blocking the M.V. *Arctic's* access during its second run of the year to the loading site. Upon concluding that the berm surrounding the bladders would contain any oil from potential leakages, the Board approved the over-wintering of the crude. The oil from the bladders will be pumped next year after mixing with newly produced oil.

The Board reviewed and recommended approval of **Paramount's Phase 1, Part 1, Extended Flow Testing and Pilot Project**, subject to contingency plan requirements. In consultation with other government departments, it was agreed that environmental reviews of subsequent parts of the project - those leading to full scale production - would be conducted at a later date as details of the proposed project were finalized. The operator was informed that an Environmental Protection Plan should be submitted for approval prior to development of further parts of Phase 1.

The Board also participated in the **Esso** Norman Wells Emergency Communication Exercise which was coordinated out of the Board's Yellowknife office.

Environmental assessments and reviews for regulatory approvals were conducted for two geological surveys in the Yukon Territory, two Authorities to Conduct Geophysical/Geological Programs in the Northwest Territories, five Authorities to Drill Wells in the Cameron Hills of the Northwest Territories, the **Panarctic** and **Paramount** Development Plans in the Northwest Territories and the Kotaneelee Sidetracking Program in the Yukon.

Other Activities

New *Physical Environmental Guidelines for Frontier Lands* were distributed. Whilst still a part of the **Canada Oil and Gas Lands Administration**, Frontier Environment also provided environmental items for the *Guidance Notes for Canada Oil and Gas Drilling Regulations* published in February 1991 and for the *Development Plan Application Guidelines* which will be published in 1992.

The Board provided input to **Environment Canada's Green Plan** initiatives from the oil and gas industry perspective. They also participated in the development of the new environmental assessment process legislation through reviews of drafts of the *Canadian Environmental Assessment Act* and participation in deliberations of the **Interdepartmental Committee on Environmental Assessment** and the **Regional Committees on Environment Assessment**.

To address environmental concerns relating to protecting oil and gas operations from the environment and the environment from those operations, the Board participated in the **Interdepartmental Panel on Energy Research and Development ("PERD") Task 6.0 Oil and Gas Committees**, by initiating, reviewing, approving, supporting and managing research projects. Further to meeting the changing requirements for Research and Development in support of oil and gas activities, Board staff partook in the decisions of the **PERD Panel** to reorganize the committee structure of **Task 6.0**.

Also, at the request of the **Departments of National Defence and Energy, Mines and Resources**, the Board provided advice on oil spills and environmental countermeasures related to the aftermath of the military confrontations in and around the Persian Gulf. Special briefings were presented to the Minister and Deputy Minister of **Energy, Mines and Resources**.

Research and Development

Research and development are integral to the functioning of the Frontier Group within the Board. The extreme environments of frontier lands require that new technologies be developed, assessed and implemented or that established technologies be adapted to these conditions. The results of the research will help improve technologies which enhance personnel safety and environmental protection requirements and refine drilling and evaluation technology. In addition to the research funding directed by the National Energy Board, research in these areas is promoted through other agencies via workshops, policy papers and participation in technical committees. Additionally, funding for a number of research projects is provided jointly with industry, other government departments and foreign governments to support those subject areas of common interest.

Panel on Energy Research and Development

Under the **Interdepartmental Panel on Energy Research and Development ("PERD")**, the Board chairs the **Task 6.2 Marine Engineering Committee**. The Board also serves on the **Petroleum Geoscience, Offshore Geotechnics, Materials, Transportation and Environment Committees** under **Task 6**. Through these committees, the Board promotes studies in evacuation technology, personnel safety, environmental protection, structures engineering, ice-structure interaction, environmental design criteria and petroleum geoscience. The major projects sponsored by **PERD** and managed by the Board are described below.

Personnel Safety

In 1991 personnel safety research focused on matters related to the safe evacuation of personnel from offshore drilling and production platforms, liferafts for downed helicopters, and the conceptual design of a system for monitoring the status of injured divers in a decompression chamber.

In relation to the evacuation from offshore platforms, the initial phase of a project to design a new system for evacuating personnel using a deployment arm for lowering a survival capsule into the ocean was supported. This deployment arm eliminates the need for cantilevering the survival capsule out from the platform, yet allows the capsule to be placed at a safe distance from the platform.

The project on helicopter evacuation involved optimizing the type of liferaft that should be carried aboard helicopters servicing offshore platforms.

The injured diver monitoring system involves the development of a working prototype of a through-hull penetrator and mating flange. The penetrator will be used for the passage of wiring into a decompression chamber for the monitoring of an injured diver. The mating flange will be adaptable to allow the transfer of an injured diver from one decompression chamber to another.

Ice-Structure Interaction

The Board chairs an advisory committee that prioritizes ice structure interaction research. Research in this area is directed to the collection and analysis of ice load field data, and the development of numerical models to be used in the assessment of ice-structure interaction. The 1991 field program included participation in a joint industry project on the development of spray-ice technology for application in the nearshore regions of the Beaufort Sea.

A project that involved the preliminary development of theoretical ice load models based on physics culminated in a workshop held to critically evaluate the models. Future research priorities for model development and field and experimental programs on ice-structure interaction were established.

Protection of Submarine Pipelines from Ice Scour

The safe design and operation of pipelines in the Arctic and Newfoundland offshore requires an understanding of the threat of ice scouring to the integrity of pipelines. A major project has been initiated, jointly with industry, towards the development of a scour model that will replicate the process occurring in the field. This multi-year research program consists of scale model testing and investigation of field events, the results of which are to be used in the development and calibration of a numerical scour model.

Environmental Design Criteria

During 1991 the **Marine Engineering Committee** funded a workshop for a major evaluation of the research being carried out on design environmental loads for offshore exploration and production systems. Representatives from national and international government, industry, and academic organizations participated in identifying research requirements and in developing recommendations for future research priorities.

Petroleum Geoscience

A contracted research project to evaluate the effects of oil-based mud on the recovery of palynomorph fossils was completed, marking the end of a series of contracts let on the effects of oil-based mud on evaluation techniques.

Environmental Studies Research Fund Programs

The **Environmental Studies Research Fund ("ESRF")** supports environmental and social studies related to the exploration and development of oil and gas resources on frontier lands. The program focuses on research needed for regulatory decision making on a regional or national basis and is administered by a small secretariat which previously resided in the **Environmental Protection Branch** of the **Canada Oil and Gas Lands Administration**. The secretariat was transferred to the Board and now resides in the Environment Directorate.

ESRF operates under the provisions of the *Canada Petroleum Resources Act* ("CPRA") and is directed by a twelve member Management Board. The Management Board consists of representatives from federal government departments, regional petroleum boards, petroleum industry organizations, and the general public. The chairman is currently the Director General of Environment Directorate of the National Energy Board. The program is funded by a levy on oil and gas companies that hold interests on frontier lands. For 1991 **ESRF** budget was \$ 748,300 and the program consisted of nine new studies scheduled for start-up during 1991 and early 1992. These augmented a program of fourteen ongoing studies which had started in 1989 and 1990. The **ESRF** publishes reports on each study funded by the program in a series which currently has 106 titles in print.

Some of the studies recently completed are:

Development of a Beaufort Sea Wildlife Compensation Model

The project developed a compensation model based on a scientific and statistical methodology which accounts for actual losses in wildlife population, habitat and future harvests. This model, which also incorporates effects of remedial and mitigative measures, could form part of an overall Beaufort Regional Wildlife Compensation Agreement.

Sensitivity of Fish Eggs and Larvae to Petroleum Hydrocarbons on the Grand Banks

The study is to evaluate the potential effects of a major oil spill on the Grand Banks commercial fish species as a result of impacts of hydrocarbons on eggs and larvae. The study was performed in two phases: review and synthesis of information, and impact analysis carried out using the methodology of the National Resources Damage Assessment Model for Coastal and Marine Environments.

Beaufort Sea Extreme Waves Study

The study reviewed earlier hindcast studies, including the **Atmospheric Environment Services ("AES")** wind hindcast and the **Marine Environmental Data Service** wave hindcast, and identified solutions to overcome shortcomings such as shallow water and marginal ice zone effects. The identified solutions were utilized to develop and select an appropriate wave model to correctly hindcast waves in the Beaufort Sea. Hindcasts were conducted on a selected storm set and verified with field data. An extreme wave probability distribution was developed for deep water sites.

Development of a National Directory of Canadian Oil Spill Response Expertise

This project catalogues the body of Canadian experts within government, industry, the academic community and the public at large who could be available on short notice to assist with various phases of response in the event of catastrophic oil spills.

Table 3
**Mainland Territories
Statistical Summary**

ACTIVITY STATUS	1987	1988	1989	1990	1991
Wells Spudded					
Exploratory/Delineation	1	3	6	11	7
Development	35	11	—	—	1
Total	36	14	6	11	8
Wells Terminated ^a					
Exploratory/Delineation	2	3	4	12	7
Development	36	11	—	—	1
Total	38	14	4	12	8
Metres Drilled	31 132	15 778	9 865	14 197	12 152
Exploratory/Delineation	974	7 095	9 865	14 197	11 517
Development	30 158	8 683	—	—	635
Geophysical Programs Run	5	9	9	2	5
Reflection Seismic km	149	1 729	1 600	181	321

^a In the Mainland Territories, where exploratory operations are generally restricted to the winter months, a well is deemed to be terminated in the year in which it reaches total depth, even though it may be reentered in the following year for testing.

RESOURCES STATUS	1987	1988	1989	1990	1991 ^b
Discovered Resources ^c					
Gas (billions of m ³)	20.8	20.8	21.8	35.5	22.7
Oil (millions of m ³)	37.2	37.2	37.7	37.7	39.1
Gas and Oil Production					
Pointed Mountain Gas (millions of m ³)	156	154	96 ^b	74	90
Norman Wells Gas (millions of m ³)	163	138	129	126	130
Norman Wells Oil (thousands of m ³)	1 531	1 728	1 789	1 841	1 894
Kotanelee Gas (millions of m ³)					227.2

^b Includes new discoveries and revisions to previous estimates.

^c As reported in previous years.

EXPENDITURES	1987	1988	1989	1990	1991
Rigs Active	3	3	5	6	5
Rig-Months	13	6	5	10	10
Money Spent (millions of \$)					
Geophysical/Geological	2.4	8.7	12.6	2.8	2.5
Exploratory/Delineation/Workovers	4.4	6.3	11.5	26.3	18.8
Development Drilling	27.0	5.3	—	—	3.7
Production Facilities	30.5	5.3	—	—	—
Total Money Spent (millions of \$)	64.3	25.6	24.1	29.1	25.0

Table 4
**Mackenzie Delta and Beaufort Sea
Statistical Summary**

ACTIVITY STATUS	1987	1988	1989	1990	1991
Wells Spudded					
Exploratory/Delineation	3	3	5	1	1
Wells Terminated ^a					
Exploratory/Delineation	3	4	4	2	1
Metres Drilled					
Exploratory/Delineation	8 344	13 438	11 273	1 614	3 173
Geophysical Programs Run	1	7	10	6	1
Reflection Seismic km	139	11 475 ^d	19 483 ^d	4 371	3 320 ^d

^a In the Beaufort Sea, where operations are seasonal and could take place over a number of seasons for a given well, a well is deemed to be terminated in the year in which it reaches total depth.

^d Includes three-dimensional seismic equivalent.

RESOURCES STATUS	1987	1988	1989	1990	1991^b
Discovered Resources ^c					
Gas (billions of m ³)	302.1	308.5	322.7	356.6	357.0
Oil (millions of m ³)	253.2	253.2	256.4	240.7	241.4

^b Includes new discoveries and revisions to previous estimates.

^c As reported in previous years

EXPENDITURES	1987	1988	1989	1990	1991
Rigs Active	3	2	4	2	1
Rig-Months	5	10	9	2	2
Money Spent (millions of \$)					
Geophysical/Geological	0.2	27.6	36.6	16.6	4.2
Exploratory/Delineation/Workovers	108.6	99.0	196.6	18.9	4.9
Total Money Spent (millions of \$)	108.8	126.6	233.2	35.5	9.1

Table 5
Arctic Islands and Eastern Arctic Offshore
Statistical Summary

ACTIVITY STATUS	1987	1988	1989	1990	1991
Wells Spudded					
Exploratory/Delineation	1	0	0	0	0
Wells Terminated					
Exploratory/Delineation	1	0	0	0	0
Metres Drilled					
Exploratory/Delineation	689	0	0	0	0
Geophysical Programs Run	0	0	0	0	0
Reflection Seismic km	0	0	0	0	0
 RESOURCES STATUS	 1987	 1988	 1989	 1990	 1991
Discovered Resources					
Gas (billions of m ³)	416.4	416.4	416.4	416.4	416.4
Oil (millions of m ³)	65.7	65.7	65.7	65.7	65.7
Oil Production					
Bent Horn (thousands of m ³)	34.5	54.9	43.4	24.0	32.6
 EXPENDITURES	 1987	 1988	 1989	 1990	 1991
Rigs Active	1	0	0	0	0
Rig-Months	2	0	0	0	0
Money Spent (millions of \$)					
Geophysical/Geological	0	0	0	0	0
Exploratory/Delineation/Workovers	8.3	0	0	0	2.7
Production Facilities	0.5	0	0	0	0
Total Money Spent (millions of \$)	8.8	0	0	0	2.7

Figure 7
Northern Frontier Regions

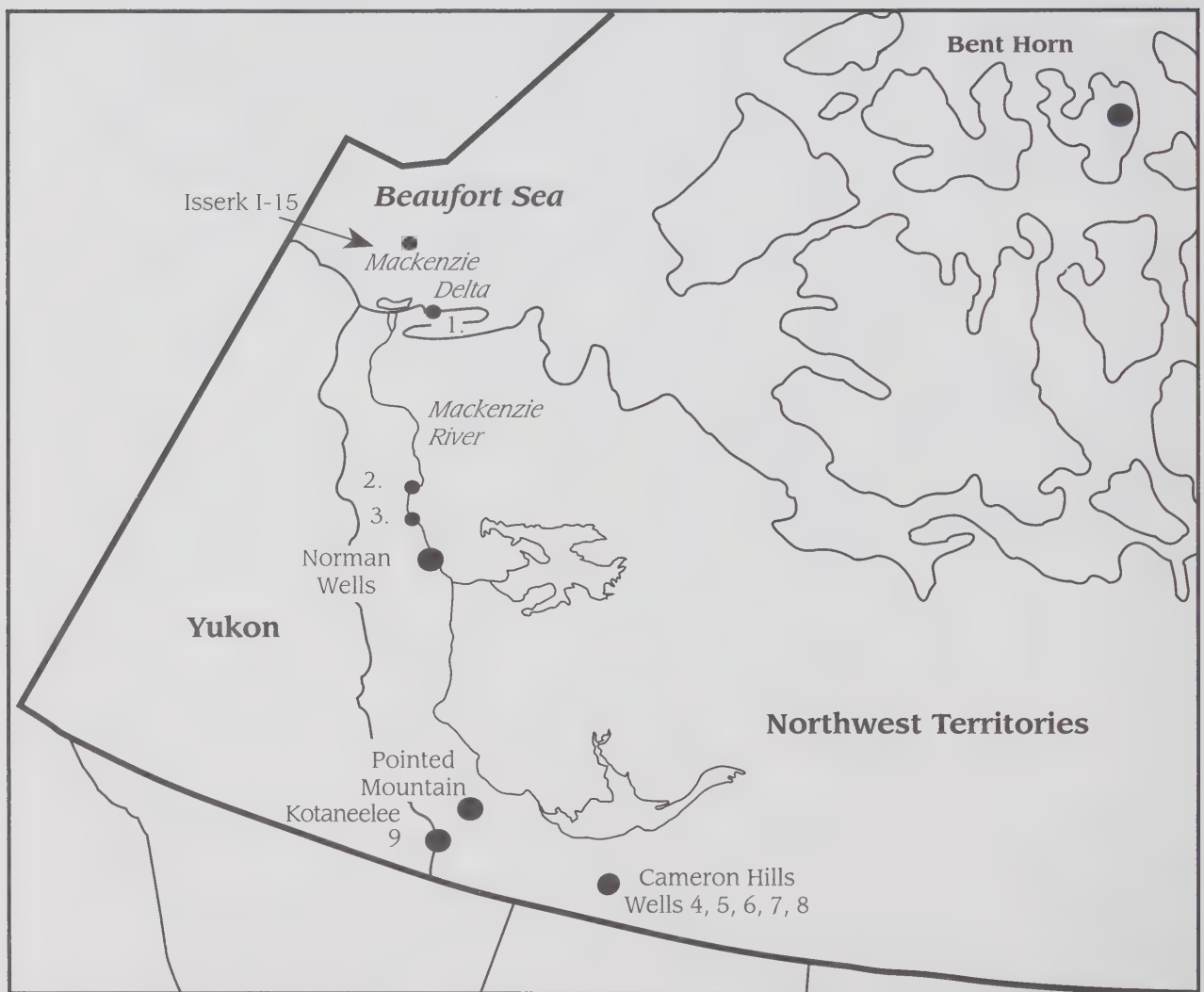
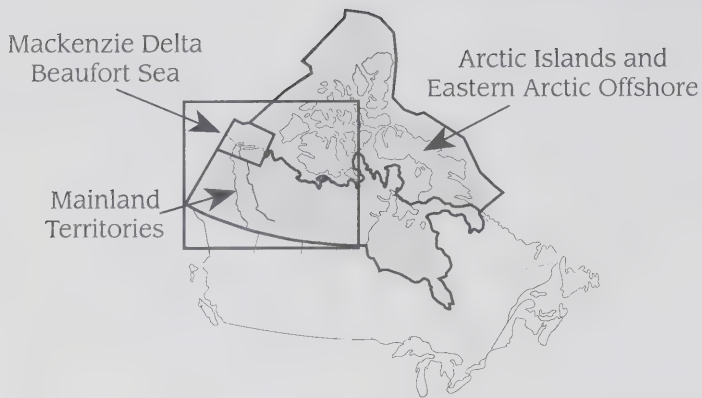


Table 6
Wells Drilled 1991

Map No.	Name of Well	Latitude, Longitude	Drilling Unit	Spudded, Reentered, Terminated	Status, Results	Total Depth (m)
1	Esso PCI Home et al Tuk E-20	69°19'18.7"N 133°04'59.9"W	Atco/Egutak 47E	91-01-25 91-04-08	Plugged & Abandoned	3173
2	Chevron Sperry Creek N-58	65°37'56.1"N 129°25'24.7"W	Shehtah 1	91-01-04 91-02-19	Plugged & Abandoned	2160
3	Chevron Ramparts River F-46	65°45'18.6"N 130°08'51.4"W	Shehtah 1	91-02-24 91-03-18	Plugged & Abandoned	1510
4	Paramount et al Cameron B-25	60°04'04.6"N 117°34'41.2"W	Sierra 3	91-01-27 91-02-10	Plugged & Suspended	1649*
5	Paramount et al Cameron M-73	60°02'51.9"N 117°29'31.9"W	Sierra 2	91-01-28 91-02-21	Plugged & Suspended	1657
6	Paramount et al Cameron C-19	60°08'07.3"N 117°33'08.0"W	Sierra 3	91-02-11 91-03-05	Plugged & Suspended	1673
7	Paramount et al Swede G-21	60°10'29.1"N 117°34'39.3"W	Command 2	91-01-20 91-02-10	Plugged & Suspended	1652
8	Paramount et al Swede A-52	60°11'09.3"N 117°39'46.8"W	Command 2	91-02-10 91-02-28	Plugged & Abandoned	1610
9	Columbia et al Kotanelee YT I-48A	60°07'35.9"N 124°07'36.5"W	Kenting Hi Tower 7	91-05-19 91-07-18	Gas Producer	3915**

* Upper 394m drilled in 1990

** Sidetracked from 3280m

Table 7
Discovered Oil and Gas Resources in Frontier Areas
(as of 31 December 1991)

	Crude Oil (Millions of Cubic Metres)	Natural Gas (Billions of Cubic Metres)
Mackenzie Delta/Beaufort Sea	241	357
Arctic Islands and Eastern Arctic Offshore	66	416
Mainland Territories	39	23
Nova Scotia Offshore (including Gulf of St. Lawrence)	24	153
Newfoundland Offshore	248	99
Labrador Offshore	7	82
Total Frontier	625	1 130

Note: Discovered resource totals are original recoverable in-place estimates and do not reflect production. (Totals have been rounded.)

Sources: National Energy Board (expressed as best current estimates: this is the quantity of oil or gas potentially recoverable using current technology and not constrained by economic viability, proved by drilling, testing or production plus that portion of contiguous recoverable resource that is interpreted to exist from geological or geophysical information.)

Offshore Nova Scotia resources courtesy of the Canada-Nova Scotia Offshore Petroleum Board (expressed as best current estimates).

Offshore Newfoundland resources courtesy of the Canada-Newfoundland Offshore Petroleum Board (expressed at 50% probability of occurrence).

Organization

Members of the National Energy Board

The membership of the Board at the end of December 1991 was:

Roland Priddle	Chairman
Jean-Guy Fredette	Vice-Chairman
R. Byron Horner, Q.C.	Member
William G. Stewart	Member
A. Boyd Gilmour	Member
Anita Côté-Verhaaf	Member
Céline Bélanger	Member
Roy Illing	Member
Kenneth W. Vollman	Temporary Member

Martha Musgrove resigned as a Member, effective 1 October 1991.

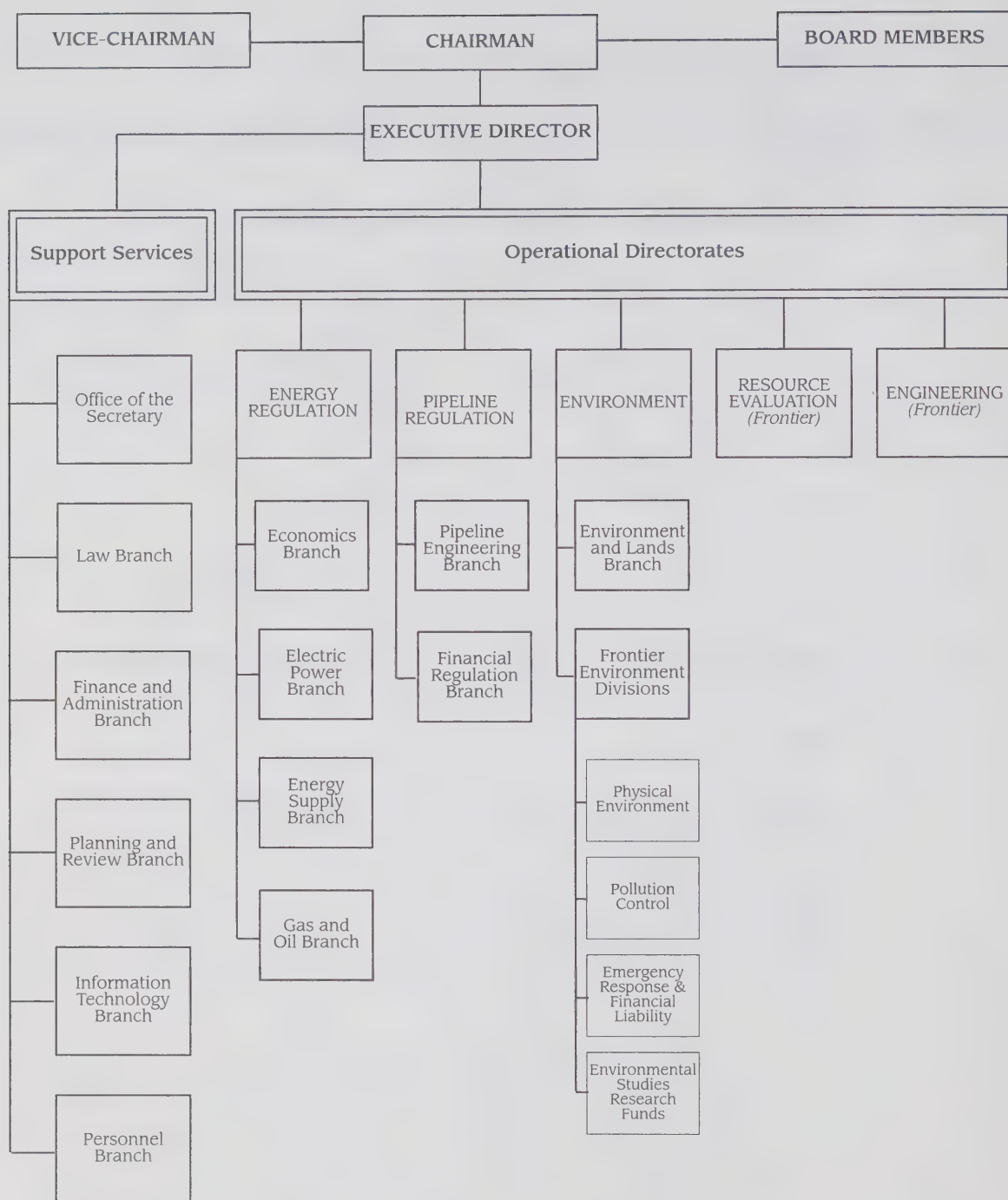
David B. Smith's term as a Temporary Member ended on 21 September 1991.

Staff

The Board's operating units are described below; the Board's senior staff are listed on the last page of this report.

The **EXECUTIVE DIRECTOR** is the Board's senior staff member and Chief Operating Officer. His responsibilities include the overall management of the Board, the acquisition and allocation of human and financial resources, the efficiency and effectiveness of Board activities and operations, and the provision of advice on such matters as the Chairman may deem appropriate.

- The **Office of the Secretary** is the Board's formal contact with the public. Thus, it receives all applications and submissions, coordinates their consideration by the Board and informs applicants and other interested parties of their outcome. It is similarly responsible for scheduling the Board's hearings and makes relevant administrative arrangements for its public hearings, wherever held. In addition, the Secretary's office is responsible for the operation of the Board's library; provides media and public relations services; and handles distribution of all the Board's publications. It administers the *Access to Information Act* and *Privacy Act* and coordinates translation services with the Secretary of State.



Please Note: The above figure accurately reflects the organizational structure of the National Energy Board for the greater part of 1991. However, early in 1992 a number of minor Branch and function realignments were undertaken, such that this figure should not be taken as representing the Board's organization after 31 December 1991.

Person-year allocation: 385

Budget: \$39.4 million

- The **Law Branch** provides legal advice to the Board on all matters relating to the Board's powers and responsibilities, acts as Counsel for the Board at public hearings, and represents the Board in proceedings before the Federal and Supreme Courts of Canada.
- The **Finance and Administration Branch** coordinates and administers the financial and administrative policies under which the Board operates. It provides advice and services relating to account processing; financial planning and budgeting; and property, material, records and mail management. It also provides accounting services for the Northern Pipeline Agency.
- The **Planning and Review Branch** is responsible for the Board's strategic and operational planning processes, program review and evaluation, internal audit program and management practices program.
- The **Information Technology Branch** is responsible for computer systems services, word processing support, data processing support and telephone services. This responsibility includes consultative services on computer operations, data management, program design and development, and an advisory service on the latest data processing techniques and applications. Branch responsibilities also include the integration of information processing systems and services for the Board.
- The **Personnel Branch** provides advice and services in the areas of staffing, human resources planning, training, employment equity, official languages, classification, staff relations, safety and health, pay and benefits, conflict of interest, employee assistance, merit awards and security.

The **ENERGY REGULATION DIRECTORATE** is responsible for the integration of all staff activities involving the regulation of energy exports and international power lines. This encompasses planning and coordinating all work affecting the regulation of international power lines and of exports of oil, gas, and electricity under *Part VI* of the *National Energy Board Act*, and coordinating the analysis of all matters related to energy demand and supply.

- The **Economics Branch** is responsible for providing advice to Board Members on the economic aspects of applications before the Board related to certification of facilities, licensing of gas and electricity exports and pipeline tolls and tariffs. In addition, the Branch provides advice to the Board, in collaboration with other branches, on general issues pertaining to energy regulation. The Branch is responsible for preparing detailed projections of energy demand in Canada; long-term outlooks for Canadian energy exports; and for preparing long-term projections of Canadian natural gas and world oil prices. These activities are performed largely in support of the Board's *Canadian Energy Supply and Demand and Natural Gas Market Assessment* reports.

- The **Electric Power Branch** advises on matters relating to electricity export authorizations, international power line certification, and regulatory surveillance. The Branch prepares supply and demand forecasts for electricity that are used in dealing with electrical and other applications, and in support of the Board's *Canadian Energy Supply and Demand* report, reviews the North American market for electricity, and provides advice on matters under federal jurisdiction that relate to the production, transportation, sale, and exchange of electricity.
- The **Energy Supply Branch** is responsible for advising on matters relating primarily to the supply of crude oil, natural gas and natural gas liquids. The Branch reviews gas supply submissions contained in applications and prepares both short-term and long-term projections of supplies of these energy commodities, based on its own studies and consultations with industry and other groups. The Branch also prepares estimates of established oil and gas reserves in Canada; compiles estimates of ultimate resource potentials and reserves additions rates; evaluates the supply costs and economics of resource projects; and investigates potential new energy supply sources. The Branch undertakes these activities in support of both the Board's regulatory and advisory responsibilities.
- The **Gas and Oil Branch** provides advice to the Board on oil and gas matters including evaluation of oil and gas markets and commercial transactions, transmission, processing and distribution of commodities. The Branch is responsible for export and import regulation, monitoring, and for matters related to traffic and discrimination in service for gas and oil pipelines. The Branch collects and disseminates data on exports and imports including volumes and prices, and also prepares and supplies data on the consumption and transportation of crude oil, petroleum products, gas products and natural gas, incorporating estimates of short-term domestic and export demand and pipeline throughput.

The **PIPELINE REGULATION DIRECTORATE** integrates all staff activities relating to the regulation of gas, oil, petroleum products pipelines. This encompasses the design, construction, operation and safety concerns specified under *Part III* of the *National Energy Board Act* and matters regarding traffic, tolls, and tariffs under *Part IV* of the *National Energy Board Act*.

- The **Pipeline Engineering Branch** advises on matters relating to pipeline certificates and orders issued under the *National Energy Board Act* and for the regulation of the safety of pipeline facilities under the Board's jurisdiction. The Branch is the Board's principal source of advice on technical matters with respect to the design, construction and operation of pipelines and coordinates the review of application by pipeline companies for facilities construction. Staff in this Branch also administer certain portions of the *Canada Labour Code* relating to pipeline worker safety.

- The **Financial Regulation Branch** has the primary responsibility for tolls and tariffs, financial regulatory advice and costs of transportation under specific areas of the *National Energy Board Act*. As such, its main function includes the provision of financial advice to the Board and to the hearing panel on all toll applications. It also audits the accounts of pipeline companies under the Board's jurisdiction and monitors the financial performance of pipelines on a regular basis to ensure that tolls are just and reasonable.

The **ENVIRONMENT DIRECTORATE** is responsible for all environmental concerns relating to the regulation of oil, gas, petroleum products, pipelines, energy exports, international powerlines and frontier oil and gas activities. These activities encompass environmental matters specified under *Parts III and VI of the National Energy Board Act* (the "*NEB Act*"), the relevant sections of the *Oil and Gas Production and Conservation Act* ("*OGPCA*") and the *Canadian Petroleum Resources Act* ("*CPRA*"). The Directorate consists of the Environment and Lands Branch (*NEB Act*), and the Physical Environment, Pollution Control, Emergency Response Financial Liability, and *ESRF* Divisions (*OGPCA* and *CPRA* functions).

- The **Environment and Lands Branch** conducts environmental screenings of applications for facilities and energy export applications; provides advice on environmental matters at pipeline and electrical export hearings; carries out environmental inspections during the construction and operation of pipeline and power line facilities; provides advice on the protection of land-owner rights with respect to land acquisition; and provides advice on the technical requirements related to third party crossings.
- The **Frontier Environment Divisions** regulate oil and gas activities on Frontier Lands to ensure that the highest standards of environmental protection are maintained. This involves both assessment of the effects of the environment on the safety of personnel and on operations, as well as of the effect of those operations on the safety of the environment. For example, the interrelationship between oceanographic, meteorological and ice conditions and the safety of personnel and operations is one area of study and assessment, while another is evaluation of the validity and effectiveness of contingency plans and compensation schemes for dealing with environmental impacts. The divisions also manage Environmental Studies Research Fund ("*ESRF*") and Program on Energy Research and Development ("*PERD*") researches designed to improve the knowledge base upon which Frontier Lands regulatory decisions and recommendations are made. The *ESRF* sponsors physical environment, biological environment, and social research studies. *PERD* research studies are primarily related to marine engineering in the context of the physical environment.

The **RESOURCE EVALUATION DIRECTORATE (Frontier)** evaluates geological and geophysical information acquired by industry on frontier lands regulated by the National Energy Board to assess discovered resources and potential. Exploration and development activities in areas managed by the Offshore Petroleum Boards are monitored to maintain a Canada-wide view of petroleum resources and regulatory procedures. The Branch also evaluates possible geological hazards in proposed drilling programs, is responsible for the regulation of geological and geophysical programs, and for the management of data submitted by industry. The Branch publishes the *Schedule of Wells* for frontier lands.

The **ENGINEERING DIRECTORATE (Frontier)** has the prime responsibility for ensuring that frontier oil and gas activities are conducted in a manner that ensures personnel safety and protection of the environment and maximizes resource conservation. These objectives are accomplished by establishing and enforcing regulations and standards related to drilling, production and conservation, diving, occupational safety, marine operations, floating and fixed offshore structures and pipeline design. Regulations are enforced through regular comprehensive inspections of the site of each activity. The Directorate also manages and fosters research projects funded by the Panel on Energy Research and Development and participates in committees to develop codes and standards to support these objectives. In addition the Directorate maintains and provides information to the industry from the drilling and production data bases.

Relocation of Head Office

The decision to move the National Energy Board's head office from Ottawa to Calgary was announced by the government in its 26 February budget speech. Spending authority necessary to facilitate the move and to support personnel in their decisions to move with the Board or remain in Ottawa was first obtained from the Treasury Board in April. Early contact with the Department of Public Works brought forward its assistance in the tendering process, culminating with the building selection in April and its offer to complete the building fit-up to enable the Board to begin taking possession in September. The Board began operations in Calgary on 3 September.

Approximately 40 per cent of the Board's employees opted to move to Calgary, which is an exceptional level of support for a relocating federal department. The Board expects that by the end of February 1992 all vacant staff positions will be filled. By year's end 1991 approximately 70 per cent of the employees who remained in Ottawa had found other employment. Costs for the move were estimated to amount to \$19 million, approximately three-quarters of the amount initially budgeted.

Functions and Responsibilities

Responsibilities Under the National Energy Board Act

The Board has two principal responsibilities under the *National Energy Board Act*:

- to regulate specific matters concerning oil, gas and electricity in the public interest, and
- to advise the government on the development and use of energy resources.

The Board has the authority to hold inquiries into any aspects of energy matters under its jurisdiction and to issue reports for the use and information of government, Parliament, and the general public.

The regulatory functions of the Board are described below.

Export Licences, Orders and Electricity Permits

The Board issues long-term authorizations for the export of oil, natural gas, and electricity. Authorizations relating to oil and natural gas are the subject of public hearings, while those relating to electricity are normally the subject of permits not requiring public hearings. However, the Board may recommend to the Governor in Council that an electricity export proposal be designated for a licensing proceeding requiring a public hearing. In issuing export authorizations, the Board must satisfy itself that, among other things, the proposed export is in the Canadian public interest. The Board also issues orders for short-term exports of oil and natural gas subject to the restrictions contained in the *National Energy Board Part VI Regulations*. In addition, the Board authorizes licences and orders for imports of natural gas.

Regulation of Pipeline Traffic, Tolls, Tariffs, and Accounting Practices

The Board regulates the traffic, tolls and tariffs of pipeline companies under federal jurisdiction to ensure that the tolls are just and reasonable and that there is no unjust discrimination in tariff or service. This involves consideration of the capital structure of a pipeline company and its operating costs and of the necessity for a fair return on investment so that capital can be attracted as needed to maintain and to extend service. The Board audits the accounts of pipeline companies and monitors their financial performance.

Certificates of Public Convenience and Necessity for Pipelines and Permits or Certificates for Power Lines

The Board grants certificates to construct and operate interprovincial and international oil, gas and petroleum products pipelines. Before a certificate is issued, the Board is required to hold a public hearing to determine whether the proposed facilities are required by the present and future public convenience and necessity. The construction and operation of international power lines are now normally authorized by the Board without public hearings. However, the Governor in Council may, on the recommendation of the Board, order that an application for a power line be subject to a certificate proceeding requiring a public hearing.

Detailed Routing - Pipelines and Power Lines

Persons whose lands may be affected by the route of a pipeline or power line approved by the Board can present their views to the Board at a local public hearing. Their evidence is considered in the determination of the final detailed route of the line.

In the case of power lines, detailed routing matters are normally dealt with under provincial laws unless an applicant elects to have federal laws apply.

Pipelines and Power Line Orders

The Board can exempt minor pipeline facilities or minor additions to, or modifications of, existing pipeline systems. These approvals are restricted to pipelines not more than 40 kilometres long and to installations such as tanks, pumps, compressors, and meter stations. The Board may also authorize, without a public hearing, the construction and operation of international power lines not exceeding 50 kilovolts.

Pipeline Safety

The *National Energy Board Onshore Pipeline Regulations* provide for the safe design, construction, and operation of pipelines under the Board's jurisdiction. To ensure high standards of pipeline construction and operation, the Board carries out inspection programs and conducts investigations of pipeline system performance.

Pipeline Utility Crossings

The Board monitors the construction and excavation activities of contractors, pursuant to the *National Energy Board Pipeline Crossing Regulations, Part I* and *Part II* to ensure safety during construction of crossing of federally regulated pipelines.

Environmental Protection

The Board considers the environmental implications of any proposal to build and operate an oil or natural gas pipeline or international power line. Companies preparing an application to the Board are encouraged to anticipate and discuss with all levels of government, public interest groups, and affected landowners the environmental issues and concerns that the proposed project could create. Such early planning with respect to environmental matters produces a more complete application addressing the appropriate alternatives and taking into account the public's concerns.

To ensure the highest level of environmental protection, the Board welcomes interventions at hearings from local environmental and public interest groups, as well as concerned individuals. To encourage public participation, the Board often convenes the hearing in the area where construction impacts would occur.

Following the issuance of a certificate or order, the Board audits a company's construction activities and, later during the operation of the system, its routine maintenance and monitoring procedures. In this way, the Board can satisfy itself that the companies continue to protect the environment, and ensure public health and safety.

Socio-Economic Impact

As part of its facilities approval process, the Board considers local and regional social and economic concerns. The Board ensures that applicants take all reasonable steps to minimize the negative impact a project may produce and to enhance project benefits accruing to local, regional and specific groups. Economic impact assessments include a review of proposed socio-economic action plans, post-certificate monitoring of the success or failure of the action plans, and an assessment of actual project impacts.

Responsibilities under the Energy Administration Act

The Board's responsibilities under the *Energy Administration Act* relate to the collection of oil export charges. Although the charges on crude oil and bulk petroleum product exports were reduced to zero in 1985, some activity continued in 1991 in the area of collection and write-off of outstanding assessments.

Responsibilities under the Northern Pipeline Act

The Board's statutory responsibilities regarding the Canadian portion of the **Alaska Natural Gas Transportation System** relate mainly to the regulation of tolls and tariffs, the approval of pipe specifications and financing arrangements, the granting of leave to open orders, and the regulation of the

operation of the line. The Board also provides to the **Northern Pipeline Agency** finance and personnel services as well as technical advice. Mr. K.W. Vollman, a Board Member, is the Designated Officer of the **Northern Pipeline Agency**.

Responsibilities under the Labour Canada Agreement

A Memorandum of Understanding has been entered into by the Board and **Labour Canada**, whereby certain Board inspectors have been appointed safety officers by the **Minister of Labour** and have assumed operational responsibilities for matters of occupational safety and health as covered in *Part II* of the *Canada Labour Code*. The agreement, which came into effect on 23 February 1987, includes all pipelines under the Board's jurisdiction but excludes certain areas such as head offices and regional offices of the pipeline companies; these will continue to be the responsibility of **Labour Canada** inspectors.

Responsibilities for Regulating Frontier Oil and Gas Activities

In April 1991, regulatory responsibilities of the Canada Oil and Gas Lands Administration (COGLA) for oil and gas exploration development in frontier lands were transferred to the Board. Until legislative amendments are passed, decision-making powers will continue to be exercised by the **Ministers of Energy, Mines and Resources** and **Indian Affairs and Northern Development** via the *Oil and Gas Production and Conservation Act* and the *Canada Petroleum Resources Act* pursuant to technical advice and assistance given by the Board and its staff.

Public Access and Participation

The Board is a court of record. With specific exceptions relating to the confidentiality of certain competitive pricing information, the Board's deliberations are conducted on the basis of information that is publicly filed and publicly available in the Board's library in Calgary. For major applications and inquiries, the Board holds public hearings at which applicants and interested persons have full rights of participation in the official language of their choice. The Board wants to ensure widespread awareness of these activities. It therefore requires that applicants publish notices of its hearings in newspapers so that interested parties will know about them in advance and can therefore raise concerns and seek information.

The Board's *Reasons for Decision* on applications are issued as public documents.

In addition, the Board issues a quarterly *Regulatory Agenda* on matters coming before the Board as well as information bulletins and news releases on a variety of matters pertaining to Board activities.

Implementation of Board Decisions

When the Board is prepared to grant a certificate for a pipeline, or to issue a licence for the export or import of natural gas or the long-term export of oil, it advises the Governor in Council through the **Minister of Energy, Mines and Resources**. If a certificate is approved by the Governor in Council, it is then issued by the Board. In the case of long term export or import applications, licences issued by the Board come into effect upon approval by the Governor in Council.

Permits issued by the Board without public hearings for electricity exports or a power line are not subject to Governor in Council approval. However, the Governor in Council may, up to 45 days following the issuance of the permit by the Board, issue an order revoking the permit and requiring that a proposed export or international power line be designated for a licensing or a certificating process involving a public hearing.

A decision of the Board to refuse an application is not subject to referral to the **Governor in Council**, except in the case of energy exports to the **United States** where certain provisions of the Free Trade Agreement would apply as a consequence of the refusal. The Board's decision on tolls and tariffs are made without reference to the **Governor in Council**, as are the majority of the Board's day-to-day decisions.

Reviews and Appeals of Board Decisions

The Board may review, rescind, or change any of its orders or decisions, or rehear any application before deciding on it. It may also change a previously issued certificate or licence, but no such change is effective until approved by the Governor in Council.

Parties may apply to the Board requesting that a decision be reviewed.

A decision may be appealed to the **Federal Court of Appeal** provided the appeal is based on a point of law or jurisdiction.

Awarding of Costs

Except in detailed route hearings, the Board does not have the power to award costs to participants in its proceedings.

In the case of detailed route hearings, the Board may establish the appropriate level of compensation to be paid to a landowner for costs associated with participation in the hearing.

Reasons for Decisions and Other Major Documents Issued in 1991

Reasons for Decisions

January 1991

The New Brunswick Electric Power Commission

(Exports of Electricity)

Hearing Orders: EW-1-90 / EW-2-90

In The Matter Of:

- Applications dated 15 February and 10 July 1990 by The New Brunswick Electric Power Commission for authorizations to export electricity under Part VI of the *National Energy Board Act* ("the Act").

Cat. No. NE 22-1/1991-1E

ISBN 0-662-18489-0

January 1991

Westcoast Energy Inc.

(Tolls)

Hearing Order: RH-1-90

In The Matters Of:

- an Application dated 27 June 1990 by Westcoast Energy Inc. for an order respecting tolls pursuant to Part VI of the *Act*; and
- National Energy Board Directions on Procedure in Order RH-1-90.

Cat. No. NE 22-1/1991-4E

ISBN 0-662-18622-2

February 1991

Interprovincial Pipe Line Company, a division of Interhome Energy Inc.

(Facilities and Tolls)

Hearing Orders: GHW-5-90 and RH-3-90

In The Matters Of:

- an Application dated 30 April 1990 by Interprovincial Pipe Line Company, a division of Interhome Energy Inc. for an order exempting certain proposed additional pipeline facilities from provisions of certain sections of the *Act* pursuant to section 58 thereof; and for an order pursuant to section 59 of the *Act* respecting the methodology of toll calculation for the proposed facilities; and
- an Application dated 22 May 1990 by the Prospective Shippers pursuant to sub-sections 58(3) and 71(1) of the *Act* for an order granting unapportioned access to the proposed facilities; and
- National Energy Board Directions on Procedure GHW-5-90 and RH-3-90, as amended.

Cat. No. NE 22-1/1991-5E

ISBN 0-662-18710-5

February 1991

Trans Québec & Maritimes Pipeline Inc.

(Tolls)

Hearing Order: RH-2-90

In The Matter Of:

- an Application by Trans Québec & Maritimes Pipeline Inc. for certain orders respecting tolls under Part IV of the *Act*.

Cat. No. NE 22-1/1991-2E

ISBN 0-662-18515-3

April 1991

Ontario Hydro

(Exports of Electricity)

Hearing Order: EW-3-90

In The Matter Of:

- an Application by Ontario Hydro for authorizations to export electricity under Part VI of the *Act*.

Cat. No. NE 22-1/1991-6E

ISBN 0-662-18871-3

April 1991

TransCanada PipeLines Limited

(Volume 3: Facilities, Gas Exports and Section 71 Applications)

Hearing Order: GH-5-89

In The Matters Of:

- an Application by TransCanada PipeLines Limited for a Certificate under Part III of the *Act* for certain proposed additional facilities for 1991 and 1992; and
- various associated applications for licences for the export of natural gas pursuant to Part VI of the *Act*; and
- applications made by various parties for orders pursuant to section 71 of the *Act*;
- issues relating to toll methodology pursuant to Part IV of the *Act* and relating to economic feasibility matters.

Cat. No. NE 22-1/1991-3E

ISBN 0-662-18516-1

April 1991

TransCanada PipeLines Limited

(Facilities)

Hearing Order: GH-4-90

In The Matters Of:

- a review, under Part 1 of the *Act*, of the Board's decision of 20 November 1989, to deny the application of TransCanada Pipelines Canada Limited ("TransCanada") dated 29 December 1988, as amended, for a certificate in respect of certain proposed facilities known as the Gananoque Extension; and

- an Application by TransCanada dated 22 June 1990 entitled "Gananoque Extension Facilities Review Application"; and
- National Energy Board Hearing Order GH-4-90, as amended.

Cat. No. NE 22-1/1991-7E

ISBN 0-662-18903-5

May 1991

Dartmouth Power Associates Limited Partnership

(Gas Exports)

Hearing Order: GH-9-90

In The Matter Of:

- an Application by Dartmouth Power Associates Limited Partnership, by its agent Brymore Energy Ltd for a Licence under Part VI of the *Act* to export natural gas.

Cat. No. NE 22-1/1991-9E

ISBN 0-662-18937-X

May 1991

L&J Energy Systems, Inc.

(Gas Export)

Hearing Order: GH-2-91

In The Matters Of:

- an Application dated 26 March 1990 by L&J Energy Systems, Inc. pursuant to Part VI of the *Act* for a licence authorizing the export of natural gas;
- National Energy Board Reasons for Decision GH-3-90; and
- an Application by L&J Energy Systems, Inc. for a review of gas export Licence GL-148

Cat. No. NE 22-1/1991-8E

ISBN 0-662-18907-8

June 1991

Westcoast Energy Inc.

(Facilities)

Hearing Order: GH-6-90

In The Matters Of:

- an Application dated 6 July 1990, as amended 6 December 1990, by Westcoast Energy Inc. for a Certificate of Public Convenience and Necessity pursuant to Part III of the *Act*, for the Adsett Pipeline Project; and
- National Energy Board Hearing Order GH-6-90.

Cat. No. NE 22-1/1991-10E

ISBN 0-662-18968-X

July 1991

TransCanada PipeLines Limited

(Facilities)

Hearing Order: GH-1-91

In The Matters Of:

- an Application by TransCanada PipeLines Limited pursuant to section 58 of the *Act* for the construction of a pipeline and associated facilities (the "Blackhorse Extension") to provide new export service at Chippawa, Ontario; and
- National Energy Board Hearing Order GH-1-91.
Cat. No. NE 22-1/1991-11E
ISBN 0-662-19006-8

September 1991

TransCanada PipeLines Limited

(Tolls)

Hearing Order: RH-1-91

In The Matters Of:

- an Application by TransCanada PipeLines Limited for certain orders respecting its tolls pursuant to Part IV of the *Act*; and
- National Energy Board Hearing Order RH-1-91.
Cat. No. NE 22-1/1991-12E
ISBN 0-662-19242-7

Other Major Documents

January 1991

**National Energy Board 1991-92 Estimates:
Part III Expenditure Plan**

Cat. No. BT31-2/1992-III-14
ISBN 0-660-56331-2

February 1991

Lexicon English - French

(A National Energy Board Guide for Translators and Editors)

March 1991

Excavation and Construction Near Pipelines (revised)

Cat. No. NE 23-31/1990E
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March 1991

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Appendix A

Companies under National Energy Board Jurisdiction

The following is a list of pipeline companies^(a) which own and/or operate interprovincial or international pipelines under the Board's jurisdiction, companies that have been granted licences to export natural gas, and electric utilities that have been granted electricity export licences by the Board. References to the following companies in this report use the abbreviations indicated in brackets.

Appendix A1

Group 1 Gas Pipelines

Alberta Natural Gas Company Ltd. (Alberta Natural Gas)
Foothills Pipe Lines Ltd. (Foothills)
TransCanada PipeLines Limited (TransCanada)
Trans Québec & Maritimes Pipeline Inc. (TQM)
Westcoast Energy Inc (Westcoast)

Appendix A2

Group 1 Oil and Products Pipelines

Cochin Pipe Lines Ltd. (Cochin)
Interprovincial Pipe Line Inc. (Interprovincial)
(Name changed during 1991 from 'Interprovincial Pipe Line Company, a division of Interhome Energy Inc.')
Interprovincial Pipe Line (NW) Ltd. (Interprovincial (NW))
Trans Mountain Pipe Line Company Ltd. (Trans Mountain)
Trans-Northern Pipelines Inc. (Trans-Northern)

Appendix A3

Group 2 Gas Pipelines

Amerada Hess Canada Ltd. (Amerada)
Amoco Canada Petroleum Company Ltd. (Amoco Petroleum) *Inactive*
Amoco Canada Resources Limited (Amoco Canada) *Inactive*
Bonanza Oil and Gas Ltd. (Bonanza)
Bow Valley Industries Ltd. (Bow Valley)
BP Resources Canada Limited (BP)
Canadian Hunter Exploration Ltd. (Canadian Hunter)

^(a) The pipeline companies have been divided into two groups, Group 1 consists of the ten major pipeline companies which are audited by the Board on a regular basis and whose operating results are continuously monitored by the Board. The 43 companies under the Board's jurisdiction that are not included in Group 1 have been designated as Group 2 companies.

Group 2 Gas Pipelines *(continued)*

Canadian-Montana Pipe Line Company (Canadian-Montana)
Centra Transmission Holdings Inc. (Centra)
Champion Pipe Line Corporation Limited (Champion)
Consumers' Gas (Canada) Limited (Consumer's Gas)
Genesis Pipeline Canada Ltd. (Genesis)
Many Island Pipe Lines (Canada) Limited (Many Islands)
Mid-Continent Pipelines Limited (Mid-Continent)
Minell Pipeline Ltd. (Minell)
Murphy Oil Company Ltd. (Murphy Oil) *Inactive*
Niagara Gas Transmission Limited (Niagara Gas)
Novacorp International Pipelines Ltd. (Novacorp)
Peace River Transmission Company Limited (Peace River)
Poco Petroleum Ltd. (Poco)
SCL Quebec Pipeline Inc. (SCL)
St. Clair Pipelines Ltd. (St. Clair Pipelines)
Union Gas Limited (Union Gas)
167496 Canada Ltd. (167496 Canada)

Appendix A4

Group 2 Oil and Products Pipelines

Aurora Pipe Line Company (Aurora)
Dome Kerrobert Pipeline Ltd. and Pan Canadian Kerrobert Pipeline Ltd.
(Dome Kerrobert and Pan Canadian)
Dome NGL Pipeline Ltd. (Dome NGL)
Dome NGL Pipeline Ltd. and Amoco Canada Petroleum Company Ltd.
(Dome NGL and Amoco)
Esso Resources Canada Limited (Esso)
Husky Border Pipelines Ltd. (Husky)
Manito Pipelines Ltd. (Manito)
Montreal Pipe Line Limited (Montreal Pipe Line)
Mont Resources Limited (Mont Resources)
Murphy Oil Company Ltd. (Murphy Oil)
Northwest Transmission Company Limited (Northwest Transmission)
Petroleum Transmission Company (Petroleum Transmission)
Pouce Coupé Pipe Line Ltd. (Pouce Coupé)
Shell Canada Products Limited (Shell)
Sun Pipe Line Company (Sun)
Wascana Pipe Line Ltd. (Wascana)
Westspur Pipe Line Company (1985) Inc. (Westspur)
Windsor Storage Facility Joint Venture (Windsor Storage)
Yukon Pipelines Limited (Yukon Pipelines)

Appendix A5

Gas Export Licence Holders

Alberta and Southern Gas Co. Ltd. (Alberta and Southern)
Alberta Northeast Gas Ltd. & AEC Oil and Gas Company (ANE & AEC) ^(b)
Alberta Northeast Gas Ltd. & ATCOR Ltd. (ANE & ATCOR) ^(b)
Alberta Northeast Gas Ltd. & ProGas Limited (ANE & ProGas) ^(b)
Alberta Northeast Gas Ltd. & TransCanada PipeLines Limited
(ANE & TransCanada) ^(b)
Amoco Canada Petroleum Company Ltd. (Amoco)
Amoco Canada Resources Limited (Amoco Resources)
BC Gas Inc. (BC Gas) ^(c)
Brymore Energy Ltd. (Brymore)
Canadian Hunter Exploration Ltd. (Canadian Hunter)
Canadian Occidental Petroleum Limited (Canadian Occidental)
Canadian-Montana Pipe Line Company (Canadian Montana)
CanStates Gas Marketing and Transco Energy Marketing Company
(CanStates/TEMCO) ^(b)
Canterra Energy Ltd. (Canterra)
Dartmouth Power Associates, Limited Partnership (Dartmouth Power)
Direct Energy Marketing Limited (Direct Energy)
Encogen Four Partners, Limited Partnership (Encogen)
Esso Resources Canada Limited (Esso)
FSC Resource Limited (FSC)
Fulton Cogeneration Associates (Fulton)
Gulf Canada Resources Limited (Gulf)
Husky Oil Operations Ltd. (Husky)
ICG Transmission Holdings Ltd. (ICG Transmission)
ICG Utilities [Ontario] Ltd. (ICG [Ontario]) ^(c)
Indeck Gas Supply Corporation (Indeck)
Kamine/Besicorp Carthage, Limited Partnership (K/B Carthage)
Kamine/Besicorp South Glens Falls, Limited Partnership (K/B South Glens)
Kanngaz Producers Ltd. (Kanngaz)
L & J Energy Systems, Inc. (L & J Energy)
Many Islands Natural Gas [Canada] Limited (Many Islands)
Mobil Oil Canada Ltd. (Mobil)
New England Power Company (New England)
Niagara Gas Transmission Limited (Niagara Gas)
Norcen Energy Resources Limited (Norcen)
North Canadian Oils Limited (North Canadian)
Pan-Alberta Gas Ltd. (Pan-Alberta)
Poco Petroleums Ltd. (Poco)
ProGas Limited (ProGas)
Ramarro Resources Inc. (Ramarro)
Selkirk Cogen Partners, Limited Partnership (Selkirk)

(b) Joint licence holders

(c) Export for re-import

Gas Export Licence Holders *(continued)*

Shell Canada Limited (Shell Canada)
TransCanada PipeLines Limited (TransCanada)
Union Gas Limited (Union Gas)
Unigas Corporation (Unigas)
Vector Energy Inc. (Vector)
Westcoast Energy Inc. (Westcoast)
Western Gas Marketing Limited (Western Gas Marketing)

Appendix A6

Electric Power Licencees, Certificate and Permit Holders

Boise Cascade Canada (Boise Cascade)
British Columbia Hydro and Power Authority (BC Hydro)
Canadian Niagara Power Company Limited (Canadian Niagara)
The Canadian Transit Company (Canadian Transit)
Cedar Rapids Transmission Company Limited (Cedar Rapids)
Cominco Ltd. (Cominco)
Cornwall Electric (Cornwall Electric) ^(d)
The Detroit and Windsor Subway Company (Detroit and Windsor)
Fraser Inc. (Fraser)
Hydro-Québec (Hydro-Québec)
Maine and New Brunswick Electrical Power Company Limited
(Maine and New Brunswick)
The Manitoba Hydro-Electric Board (Manitoba Hydro)
The New Brunswick Electric Power Commission (New Brunswick Power)
Ontario Hydro (Ontario Hydro)
Saskatchewan Power Corporation (Sask Power)
West Kootenay Power and Light Company Limited (West Kootenay)

^(d) All licencees except Cornwall Electric export over their own facilities for which Board certificates have been issued. Cornwall Electric exports its power over the facilities of Cedar Rapids.

Appendix B

Oil

B1. Certificates Issued During 1991 Approving New Oil Pipeline Facilities Including Pipeline Construction Exceeding 40 Kilometres in Length

No Certificates were issued in 1991.

B2. Orders Issued During 1991 Approving New Oil Pipeline Facilities Including Pipeline Construction Not Exceeding 40 Kilometres in Length

Applicant	Order No.	Issued	Facilities	Estimated Cost (\$)
Husky Border Pipelines Ltd.	X0-6-91	91-05-23	Four pipelines, 10.4-km each, and a pump/meter station, Lloydminster, Alberta-Saskatchewan	7 579 500

B3. Orders Issued During 1991 Approving Modifications and Additions to Existing Oil Pipeline Facilities

Applicant	Order No.	Issued	Facilities	Estimated Cost (\$)
Cochin Pipe Lines Ltd.	X0-16-91	91-10-24	3 200-m, 324-mm pipeline replacement and relocation of a pump station at Alameda Dam Project, Saskatchewan	
	X0-21-91	91-11-22	1 040-m, pipeline replacement and sectionalizing valve, Fort Saskatchewan, Alberta	472 000
Dome Kerrobert Pipeline Ltd. and PanCanadian Kerrobert Pipeline Ltd.	X0-17-91	91-10-22	New scraper traps and modifications of existing scraper traps, Alberta/Saskatchewan	75 000
Dome NGL Pipeline Ltd.	X0-19-91	91-11-7	Piping modifications, Windsor Pump Station, Ontario	120 000
Dome NGL Pipeline Ltd. and Amoco Canada Petroleum Company Ltd.	X0-10-91	91-06-27	Pipeline tie-in, Ontario	10 000
Interprovincial Pipe Line Company, a division of Interhome Energy Inc.	X0-1-91	91-02-15	Natural gas liquids storage and injection facilities, Edmonton Terminal	18 044 000

B3. Orders Issued During 1991 Approving Modifications and Additions to Existing Oil Pipeline Facilities *(Continued)*

Applicant	Order No.	Issued	Facilities	Estimated Cost (\$)
Interprovincial Pipe Line Company, a division of Interhome Energy Inc.	X0-2-91	91-03-25	Valve actuator and gear box, Regina Terminal	20 000 000
	X0-3-91	91-03-28	Supplementary Projects	2 305 100
	X0-4-91	91-04-18	Supplementary Project, Hardisty	13 700 000
	X0-7-91	91-04-18	Metering manifold and fillet weld program	9 336 000
	X0-14-91	91-11-14	Miscellaneous Projects	1 797 900
	X0-18-91	91-11-14	Supplementary Projects	1 019 100
Manito Pipelines Ltd.	X0-20-91	91-11-07	Two additional pumps and two additional meters, Saskatchewan	585 000
Petroleum Transmission Company	X0-5-91	91-04-18	Pipeline upgrading and remote valve operators, Saskatchewan-Manitoba	385 000
Trans Mountain Pipe Line Company Ltd.	X0-8-91	91-05-02	Mainline repair, and Repower Load centre at Westridge, British Columbia	128 900
	X0-9-91	91-06-27	Relocation Section of Pipeline, British Columbia	790 000
	X0-11-91	91-06-27	465-m, 610-mm pipeline relocation, British Columbia	1 222 000
	X0-15-91	91-08-29	Pipe racks, Edmonton Terminal, Alberta	700 000
	X0-22-91	91-12-20	Miscellaneous Projects for 1992	11 400 000
Trans-Northern Pipelines Inc.	X0-13-91	91-08-01	Supplementary Projects	5 077 000
Westspur Pipe Line Company (1985) Inc.	X0-12-91	91-07-25	2 700-m, 406.4-mm crude oil pipeline replacement, 2 700-m, 323.9-mm natural gas liquids pipeline replacement and three block valves at Alameda Dam Project, Saskatchewan	

Appendix C

Gas

C1. Certificates Issued During 1991 Approving New Gas Pipeline Facilities Including Pipeline Construction Exceeding 40 Kilometres in Length

Applicant	Certificate No.	Issued	Facilities	Estimated Cost (\$)
TransCanada PipeLines Limited	GC-80	91-05-17	1 190-km loops and pipeline, 17 compressor units and a meter station Manitoba, Saskatchewan and Ontario	18 351 000
Westcoast Energy Inc.	GC-81	91-11-21	48-km, 219.1-mm Adsett Pipeline, British Columbia	8 300 000

C2. Orders Issued During 1991 Approving New Gas Pipeline Facilities Including Pipeline Construction Not Exceeding 40 Kilometres in Length

Applicant	Order No.	Issued	Facilities	Estimated Cost (\$)
Amerada Hess Canada Ltd.	XG-9-91	91-02-18	22.5-km, 273-mm Goodlow Pipeline, British Columbia-Alberta	3 100 000
Bow Valley Industries Ltd.	XG-3-91	91-01-24	5-km, 88.9-mm pipeline, Alberta-Saskatchewan	177 000
Canadian Hunter Exploration Ltd.	XG-26-91	91-06-13	3.75-km, 114.3-mm pipeline, British Columbia-Alberta	619 000
Many Islands Pipe Lines (Canada) Limited	XG-2-91	91-01-10	30-m, 114.3-mm Renaissance Pipeline, Alberta-Saskatchewan	6 100
Murphy Oil Company Ltd.	XG-1-91	91-01-02	12-km, 119.3-mm pipeline, Alberta-Saskatchewan	370 000
TransCanada PipeLines Limited	XG-8-91	91-02-06	Exemptions and requirements respecting crossing of Lake Wahtopanah, Manitoba, by 1219-mm loop referred to in Certificate GC-78, issued 90-11-28	
	XG-11-91	91-03-15	26.1 MW compressor unit at Station 116, North Bay, Ontario	24 500 000
	XG-14-91	91-04-11	Sydenham Meter Station, Ontario	419 000
	XG-15-91	91-05-16	1.2-km, 914-mm test loop, Western Gas Research Facility, Saskatchewan	630 000
	XG-22-91	91-05-16	Nipigon Power Meter Station, Ontario	303 000
	XG-39-91	91-12-20	Deep River Sales Tap, Ontario	113 000

C2. Orders Issued During 1991 Approving New Gas Pipeline Facilities Including Pipeline Construction Not Exceeding 40 Kilometres in Length *(Continued)*

Applicant	Order No.	Issued	Facilities	Estimated Cost (\$)
Trans Québec & Maritimes Pipeline Inc.	XGM-35-91	91-09-12	Deschambault Meter Station, Québec	510 000
Westcoast Energy Inc.	XG-5-91	91-01-15	33.45-km, 406.4-mm Klua Pipeline, British Columbia	11 000 000
	XG-12-91	91-03-14	Facilities purchased from Petro-Canada Inc., to be added to Taylor Processing Plant, British Columbia	20 350 000
	XG-13-91	91-03-28	39.26-km, 914-mm Fort Nelson Mainline looping, British Columbia	41 700 000
	XG-29-91	91-07-04	37.5-km, 914-mm Mainline looping at three locations, British Columbia	52 500 000

C3. Orders Issued During 1991 Approving Modifications and Additions to Existing Gas Pipeline Facilities

Applicant	Order No.	Issued	Facilities	Estimated Cost (\$)
Alberta Natural Gas Company Ltd	XG-7-91	91-01-31	Miscellaneous Projects	18 597 100
Champion Pipe Line Corporation Limited	XG-34-91	91-08-06	Total of 300-m, 219.1-mm pipeline lowerings at three locations, Québec	60 000
Consumers' Gas (Canada) Ltd.	XG-17-91	91-07-02	51-mm tap into 610-mm pipeline, Brampton, Ontario	500
	XG-32-91	91-08-01	28-m, 610-mm pipeline lowering, Brampton, Ontario	210 000
Foothills Pipe Lines Ltd.	XG-4-91	91-01-14	Scraper Trap Modifications	101 503
	XG-10-91	91-03-01	Miscellaneous Projects	3 888 500
	XG-16-91	91-04-11	Supervisory Control and Data Acquisition System (SCADA) upgrade, Alberta and Saskatchewan	1 540 000

C3. Orders Issued During 1991 Approving Modifications and Additions to Existing Gas Pipeline Facilities *(Continued)*

Applicant	Order No.	Issued	Facilities	Estimated Cost (\$)
Foothills Pipe Lines (Alta.) Ltd.	XG-24-91	91-06-06	Partial Third Train Expansion at Empress, Alberta	7 000 000
Many Islands Pipelines (Canada) Limited	XG-31-91	91-09-23	5-m, 406.4-mm bypass piping at Shaunavon Compressor Station, Saskatchewan	12 000
	XG-36-91	91-09-12	Tie-in to Esther-Smilely Pipeline, Saskatchewan	10 500
	XG-40-91	91-11-20	Tie-in to Esther-Smilely Pipeline, Saskatchewan	10 500
TransCanada PipeLines Limited	XG-6-91	91-02-14	Miscellaneous Projects	19 104 000
	XG-20-91	91-05-16	Miscellaneous Projects	2 872 000
	XG-21-91	91-05-01	Land exemptions for looping referred to in GC-80, issued 91-05-17	
	XG-23-91	91-06-06	Portable Compressor Unit, Station 1401, Ontario	4 410 000
	XG-27-91	91-06-13	Compressor Station Modifications and Changes	2 381 000
	XG-28-91	91-06-27	77-m, 508-mm pipeline replacement at highway crossing, Ontario	187 000
	XG-30-91	91-07-31	Station manifolding, standby plant and spares, Saskatchewan and Ontario	62 605 000
	XG-37-91	91-09-12	Miscellaneous Projects	809 000
	XG-38-91	91-10-03	Two pipeline replacement portions and four valve removals, Québec	247 000
Trans Québec & Maritimes Pipeline Inc.	XG-19-91	91-05-16	Delivery Point at Yamachiche, Québec	18 500
	XG-25-91	91-06-06	Delivery Point at Oka, Québec	13 900
Westcoast Energy Inc.	XG-18-91	91-05-02	Miscellaneous Projects	6 160 000
	M0-10-91	91-05-02	Pipeline Diversion, 1.6-km, 762-mm, Fort St. John Mainline, British Columbia	1 930 000
	XG-33-91	91-08-29	Miscellaneous Projects	4 403 000

C4. Licences and Long-Term Orders to Export Natural Gas as at 31 December 1991

Exporter	Licence or Order Number	Point of Export	Term of Licence or Order		Maximum Volumes		
			From	To	Daily (10 ³ m ³)	Annual (10 ⁶ m ³)	Term (10 ⁶ m ³)
Alberta and Southern Gas Co. Ltd.	L-99	Kingsgate, BC.	1986-12-18	1987-10-31	31 897.2	9 340.9	77 626.5
			1987-11-01	1994-10-31	31 897.2	10 580.4	
	GL-111	Kingsgate, BC.	1994-11-01	2005-10-31	31 900.0	10 580.5	116 385.0
Alberta Northeast Gas Ltd. and AEC Oil and Gas Company	GL-105	Iroquois, Ont.	1988-11-01	2003-10-31	495.7	180.9	2 714.0
Alberta Northeast Gas Ltd. and ATCOR Ltd.	GL-104`	Iroquois, Ont.	1988-11-01	2003-10-31	991.5	361.9	5 428.0
Alberta Northeast Gas Ltd. and ProGas Limited	GL-103	Iroquois, Ont.	1988-11-01	2003-10-31	1 869.6	682.4	10 236.0
Alberta Northeast Gas Ltd. and TransCanada PipeLines Limited	GL-102	Iroquois, Ont.	1988-11-01	2003-10-31	7 506.9	2 740.0	42 646.0
		Niagara Falls, Ont.	1988-11-01	2003-10-31	283.3	103.4	
Amoco Canada Petroleum Company Ltd.	GL-112	Huntingdon, BC.	1989-07-24	1989-10-31	704.0	70.4	3 856.0
			1989-11-01	2004-10-31	704.0	257.0	
Amoco Canada Resources Limited	GL-108	Emerson, Man.	1989-03-16	1989-10-31	422.5	96.8	1 504.0
			1989-11-01	2001-10-31	422.5	154.0	
Amoco Canada Resources Limited and Consolidated Edison Company	GL-127	Niagara Falls, Ont.	1990-07-27	1990-10-31	873.0	84.7	4 728.0
			1990-11-01	2004-10-31	873.0	319.0	4 778.0
BC Gas Inc.	GL-123(a)	Huntingdon, BC.	1989-11-09	1992-04-30	1 703.0	61.3	184.0
Canadian Hunter Marketing Ltd.	GL-107	Niagara Falls & Iroquois, Ont.	1990-11-01	2010-10-31	845.0	254.0	3 381.0
Canadian-Montana Pipe Line Company	GL-25	Aden/Cardston, Alta, Emerson, Man. & Niagara Falls, Ont.	1968-11-01	1969-10-31	339.9	103.4	4 890.8
			1969-11-01	1991-10-31	679.9	206.8	
			1991-11-01	1993-10-31	390.9	119.0	
	GL-72	Aden, Alta.	1988-01-01	1988-10-31	1 133.1	236.1	1 085.7
			1988-11-01	1990-10-31	1 416.4	283.3	
			1990-11-01	1991-10-31	1 416.4	188.7	
			1991-11-01	1992-10-31	1 416.4	94.3	
	GO-3-79	Reagan Field, Alta.	1979-05-01	1993-12-31	30.0	10.3	105.0
Canadian Occidental Petroleum Ltd.	GL-150	Niagara Falls, Ont.	1991-11-01	2006-10-31	433.4	158.2	2 373.0

C4. Licences and Long-Term Orders to Export Natural Gas as at 31 December 1991 (Continued)

Exporter	Licence or Order Number	Point of Export	Term of Licence or Order		Maximum Volumes		
			From	To	Daily (10 ³ m ³)	Annual (10 ⁶ m ³)	Term (10 ⁶ m ³)
Canstates Gas Marketing and Transco Energy Marketing Company	GL-137	Niagara Falls, Ont.	1990-11-08	1991-10-31	1 371.1	449.7	5 593.8
			1991-11-01	2000-10-31	1 371.1	459.3	
			2000-11-01	2002-10-31	1 371.1	500.4	
Canterra Energy Ltd.	GL-113	Emerson, Man.	1989-08-24	1989-10-31	424.9	29.3	2 099.1
			1989-11-01	2003-10-31	424.9	155.1	
	GL-114	Emerson, Man.	1989-08-24	1989-10-31	424.9	29.3	2 246.4
Centra Gas Ontario Ltd.	GL-130(b)	Sprague, Man.	1990-07-27	1990-10-31	640.0	62.1	3 150.0
Centra Transmission Holdings Ltd.	GL-28	Sprague, Man.	1970-11-01	1995-10-31	80.3	9.5	229.0
	GL-29	Fort Frances, Ont.	1970-11-01	1995-10-31	915.6	218.5	5 462.2
	GL-30(b)	Sprague, Man.	1970-11-01	1995-10-31	1 321.8	344.0	8 498.1
Darmouth Power Associates Limited partnership	GL-164	Iroquois, Ont.	1992-11-01	2007-10-31	400.9	146.4	2 196.0
Direct Energy Marketing Limited	GL-132	Philipsburg, Que.	1990-07-27	1990-10-31	171.0	16.6	936.2
			1990-11-01	2005-10-31	171.0	62.4	
Encogen Four Partners	GL-152	Chippawa, Ont.	Date of 1st deliveries for 15-year term		424.9	155.1	2 326.6
Esso Resources Canada Ltd.	GL-151	Iroquois, Ont.	1991-11-01	2006-10-31	991.5	362.0	5 432.0
Esso Resources Canada Ltd. and Transco Energy Marketing Company	GL-136	Niagara Falls, Ont.	1990-11-08	1991-10-31	2 125.0	76.1	9 307.5
			1991-11-01	2002-10-31	2 125.0	775.6	
FSC Resources Ltd.	GL-138	Napierville, Que.	1991-03-01	1991-10-31	1 530.0	374.9	8 376.8
			1991-11-01	2005-10-31	1 530.0	558.5	
	GL-153	Niagara Falls, Ont.	1991-11-01	2006-10-31	453.0	165.3	2 480.2
Fulton Cogeneration Ass.	GL-154	Chippawa, Ont.	1991-11-01	2001-10-31	326.2	119.0	1 424.0
			2001-11-01	2005-10-31	160.0	58.4	
Husky Oil Operations Ltd.	GL-144	Cornwall, Ont.	1992-08-01	2007-11-01	566.6	206.8	3 154.0
Indeck Gas Supply Corporation	GL-133	Niagara Falls, Ont.	1990-07-27	1990-10-31	810.0	78.6	3 500.0
			1990-11-01	2005-10-31	810.0	293.0	
	GL-155	Chippawa, Ont.	Date of 1st deliveries for 15-year term		459.0	168.0	2 439.0
	GL-156	Chippawa, Ont.	Date of 1st deliveries for 15-year term		210.0	73.0	852.0
Kamine / Besicorp Carthage L.P.	GL-158	Chippawa, Ont.	1991-11-01	2006-10-31	402.3	139.5	2 093.7

C4. Licences and Long-Term Orders to Export Natural Gas as at 31 December 1991 *(Continued)*

Exporter	Licence or Order Number	Point of Export	Term of Licence or Order		Maximum Volumes		
			From	To	Daily (10 ³ m ³)	Annual (10 ⁶ m ³)	Term (10 ⁶ m ³)
Kamine/ Besicorp South Glens L.P.	GL-159	Emerson, Man.	1991-11-01	2006-10-31	402.3	139.5	2 093.7
KannGaz Producers Ltd.	GL-77	Niagara Falls, Ont.	1987-11-01	1996-10-31	3 540.0	1 292.1	13 567.0
			1996-11-01	1997-10-31	2 655.0	969.1	
			1997-11-01	1998-10-31	1 770.0	646.0	
			1998-11-01	1999-10-31	885.0	323.0	
L&J Energy Systems Inc.	GL-148	Iroquois, Ont.	Date of 1st deliveries for 12-year term		329.6	121.3	1 455.6
Many Islands Natural Gas (Canada) Limited	GL-44(c)	Emerson, Man.	1972-03-15	1992-10-31	4 249.2	1 274.8	18 951.3
Mobil Oil Canada	GL-145	Huntingdon, B.C.	1991-01-24	2000-10-31	327.5	119.5	1 195.5
			1991-01-24	1992-10-31	136.5	49.8	1 145.6
			1992-11-01	1995-10-31	272.9	99.6	
	GL-146	Huntingdon, B.C.	1995-11-01	2000-10-31	409.4	149.4	
			1991-01-24	1992-10-31	272.9	99.6	1 842.9
			1992-11-01	2003-10-31	409.4	149.4	
New England Power Co.	GL-160	Iroquois, Ont.	1991-11-01	2006-11-01	1 700.0	621.0	9 308.0
Niagara Gas Transmission Limited	GL-78	Cornwall, Ont.	1987-11-01	1990-10-31	1 200.0	275.0	1 099.7
			1990-11-01	1991-10-31	799.2	183.1	
			1991-11-01	1992-10-31	399.2	91.6	
Norcen Energy Resources Limited	GL-115	Emerson, Man.	1989-08-24	1989-10-31	396.6	27.4	1 841.0
			1989-11-01	2001-10-31	396.6	144.5	
	GL-116	Emerson, Man.	1990-05-03	1990-10-31	184.1	33.5	1 034.0
			1990-11-01	1994-10-31	184.1	67.2	
North Canadian Oils Limited	GL-142	Emerson, Man.	1990-11-08	1991-10-31	283.3	101.4	1 068.8
			1991-11-01	2000-10-31	283.3	103.4	
North Canadian Oils Limited	GL-143	Emerson, Man.	1990-11-08	1991-10-31	283.3	101.4	1 068.8
			1991-11-01	2000-10-31	283.3	103.4	
Pan-Alberta Gas Ltd.	GL-95	Emerson, Man. & Niagara Falls, Ont. combined maximum	1987-11-01	1996-10-31	4 332.5	1 581.4	16 604.7
			1996-11-01	1997-10-31	3 249.4	1 186.0	
			1997-11-01	1998-10-31	2 166.2	790.7	
			1998-11-01	1999-10-31	1 083.1	395.4	
		Maximum permitted at Niagara Falls, Ont. as part of combined Emerson/Niagara Falls volumes	1987-11-19	1996-10-31	1 442.7	526.6	
			1996-11-01	1997-10-31	1 082.1	394.9	
			1997-11-01	1998-10-31	721.3	263.3	
			1998-11-01	1999-10-31	360.7	131.7	
	GL-97	Monchy, Sask.	1984-12-20	1985-10-31	24 928.5	7 582.8	75 296.7
			1985-11-01	2001-10-31	24 928.5	8 294.4	
	GL-106	Kingsgate, BC.	1988-11-01	2012-10-31	7 478.6	2 488.3	59 719.2

C4. Licences and Long-Term Orders to Export Natural Gas as at 31 December 1991 (Continued)

Exporter	Licence or Order Number	Point of Export	Term of Licence or Order		Maximum Volumes		
			From	To	Daily (10 ³ m ³)	Annual (10 ⁶ m ³)	Term (10 ⁶ m ³)
Pawtucket Power Associates Limited Partnership	GL-149	Iroquois, Ont.	1991-11-01	2006-10-31	362.5	132.4	1 986.0
Poco Petroleum Ltd.	GL-117	Emerson, Man.	1989-08-24	1989-10-31	708.2	48.9	2 843.5
			1989-11-01	2000-10-31	708.2	258.5	
	GL-118	Emerson, Man.	1989-08-24	1989-10-31	708.2	48.9	2 715.3
			1989-11-01	2000-10-31	708.2	258.5	
ProGas Limited	GL-81	Emerson, Man.	1987-11-01	1990-10-31	5 270.0	1 923.5	15 026.7
			1990-11-01	1991-04-30	5 270.0	953.9	
			1991-05-01	1991-10-31	4 561.8	839.4	
			1991-11-01	1996-10-31	4 561.8	1 665.0	
			1996-11-01	1997-10-31	3 244.3	1 184.1	
			1997-11-01	1998-10-31	1 926.8	703.2	
			1998-11-01	1999-10-31	609.3	222.4	
	GL-98	Emerson, Man. & Monchy, Sask. combined maximum	1986-08-13	1986-10-31	9 440.9	2 583.2	35 492.8
			1986-11-01	1987-10-31	7 552.7	2 480.0	
			1987-11-01	2000-10-31	9 440.9	3 100.0	
		Maximum permitted at Monchy, Sask. as part of combined Emerson/Monchy volumes	1986-08-13	1986-10-31	6 797.4	2 480.0	17 746.4
			1986-11-01	1987-10-31	3 776.3	1 240.0	
			1987-11-01	2000-10-31	4 720.4	1 550.0	
	GL-101	Niagara Falls, Ont.	1989-05-01	1989-10-31	1 420.0	260.6	10 340.0
			1989-11-01	2009-10-31	1 420.0	517.0	
	GL-109	Niagara Falls & Iroquois, Ont.	1991-05-01	1991-10-31	708.2	130.3	5 170.0
			1991-11-01	2011-10-31	708.2	258.5	
	GL-129	Niagara Falls, Ont.	1990-07-27	1990-10-31	2 861.1	277.5	15 665.3
			1990-11-01	2005-10-31	2 861.1	1 044.3	
	GL-161	Iroquois, Ont.	Date of 1st deliveries for 18.5-year term		708.2	258.5	4 800.4
Ramarro Resources Inc.	GL-139	Niagara Falls, Ont.	1990-11-08	1991-10-31	169.0	60.5	925.5
			1991-11-01	2005-10-31	169.0	61.7	
Selkirk Cogen Partners, L.P.	GL-157	Iroquois, Ont.	Date of 1st deliveries for 15.5-year term		651.5	237.8	3 685.9
Shell Canada Limited	GL-100	Highwater, Que.	1987-11-01	1998-10-31	1 110.0	300.0	5 900.0
			1998-11-01	1999-03-31	1 110.0	167.6	
		Niagara Falls, Ont.	1987-11-01	1998-10-31	1 390.0	400.0	
			1998-11-01	1999-03-31	1 390.0	209.9	
	GL-119	Emerson, Man.	1989-08-24	1989-10-31	424.9	29.3	2 234.0
			1989-11-01	2003-10-31	424.9	155.1	

C4. Licences and Long-Term Orders to Export Natural Gas as at 31 December 1991 (Continued)

Exporter	Licence or Order Number	Point of Export	Term of Licence or Order		Maximum Volumes		
			From	To	Daily (10 ³ m ³)	Annual (10 ⁶ m ³)	Term (10 ⁶ m ³)
Shell Canada Limited (continued)	GL-120	Emerson, Man.	1989-08-24	1989-10-31	424.9	29.3	2 250.0
			1989-11-01	2004-10-31	424.9	155.1	
	GL-134	Niagara Falls,Ont.	1990-07-27	1990-10-31	450.0	43.6	2 755.0
			1990-11-01	2010-10-31	450.0	145.0	
			2010-11-01	2011-08-31	450.0	95.8	
TransCanada PipeLines Limited	GL-42(d)	Emerson, Man.	1971-04-15	1971-10-31	N/S	232.8	60 316.5
			1971-11-01	1994-10-31	N/S	2 612.3	
	GL-83	Niagara Falls, Ont.	1984-11-01	1986-10-31	1 133.1	414.0	16 371.0
			1986-11-01	2002-10-31	2 620.3	959.0	
			2002-11-01	2003-01-15	2 620.3	199.1	
	GL-84	Niagara Falls, Ont.	1987-11-01	1988-10-31	142.0	51.8	2 378.0
			1988-11-01	1997-10-31	708.0	258.4	
	GL-86	Emerson, Man.	1987-11-01	1990-10-31	2 832.8	1 034.0	10 886.4
			1990-11-01	1991-10-31	2 832.8	1 036.8	
			1991-11-01	1994-10-31	2 832.8	1 034.0	
			1994-11-01	1995-10-31	2 832.8	1 036.8	
			1995-11-01	1996-10-31	2 832.8	1 034.0	
			1996-11-01	1997-10-31	2 188.7	798.9	
			1997-11-01	1998-10-31	1 416.4	517.0	
			1998-11-01	1999-10-31	708.2	259.2	
	GL-87	Emerson, Man.	1987-11-01	1990-10-31	2 832.8	1 034.0	10 886.4
			1990-11-01	1991-10-31	2 832.8	1 036.8	
			1991-11-01	1994-10-31	2 832.8	1 034.0	
			1994-11-01	1995-10-31	2 832.8	1 036.8	
			1995-11-01	1996-10-31	2 832.8	1 034.0	
			1996-11-01	1997-10-31	2 188.7	798.9	
			1997-11-01	1998-10-31	1 416.4	517.0	
	1998-11-01	1999-10-31	708.2	259.2			
	GL-89	Emerson, Man.	1984-11-01	1985-10-31	6 317.1	524.1	12 960.8
			1985-11-01	1986-10-31	6 317.1	1 957.3	
1986-11-01			1990-10-31	6 317.1	2 096.3		
1990-11-01			1991-10-31	4 207.2	1 396.1		
1991-11-01			1992-10-31	2 103.6	698.1		
GL-110	Niagara Falls & Iroquois, Ont.	1991-05-01	1991-10-31	708.2	130.3	5 443.2	
		1991-11-01	2012-10-31	708.2	258.5		
GL-121	Emerson, Man.	1989-08-24	1989-10-31	424.9	29.3	2 326.5	
		1989-11-01	2003-10-31	424.9	155.1		
GL-122	Emerson, Man.	1989-08-24	1989-10-31	424.9	29.3	2 326.5	
		1989-11-01	2004-10-31	424.9	155.1		
GL-135	Gananoque,Ont.	1990-07-27	1990-10-31	1 445.0	140.2	7 910.0	
		1990-11-01	2005-10-31	1 445.0	529.0		

C4. Licences and Long-Term Orders to Export Natural Gas as at 31 December 1991 (Continued)

Exporter	Licence or Order Number	Point of Export	Term of Licence or Order		Maximum Volumes		
			From	To	Daily (10 ³ m ³)	Annual (10 ⁶ m ³)	Term (10 ⁶ m ³)
Unigas Corporation	GL-162	Chippawa, Ont.	Date of 1st deliveries for a 10-year term		453.2	165.5	1 654.2
Union Gas Limited	GL-92	Windsor, Ont.	1985-11-01	1990-10-31	1 100.0	284.0	1 703.7
			1990-11-01	1991-10-31	732.6	189.1	
			1991-11-01	1992-10-31	366.3	94.6	
Vector/7 Producers	GL-140	Niagara Falls, Ont.	1990-11-08	1991-10-31	892.3	319.6	5 025.6
			1991-11-01	2005-10-31	892.3	325.8	
Westcoast Energy Marketing Ltd.	GL-131	Huntingdon & Kingsgate, B.C.	1990-08-28	1990-10-31	4 524.8	294.1	23 228.0
			1990-11-01	2004-10-31	4 524.8	1 651.6	
Western Gas Marketing Limited	GL-128	Cornwall, Ont.	1990-07-27	1990-10-31	331.0	32.1	1 820.0
			1990-11-01	2005-10-31	331.0	121.3	
	GL-141	Emerson, Man.	1990-11-08	1991-10-31	424.9	152.1	2 326.5
			1991-11-01	2005-10-31	424.9	155.1	
	GL-163	Niagara Falls, Ont.	Date of 1st deliveries for a 15-year term		283.0	103.7	1 552.0

a - This licence authorizes an export of natural gas at Huntingdon, B.C. for storage in the U.S. and for subsequent import through exchange arrangements with other exporters.

b - This licence authorizes an export of natural gas near Sprague, Manitoba for import near Rainy River, Ont.

c - This licence authorizes the export of natural gas which the licensee has imported near Willow Creek, Sask. pursuant to Licence GLI-5.

d - This licence authorizes an export of natural gas near Emerson, Manitoba for import near Sault Ste-Marie and Sarnia, Ont., to serve the eastern Canadian Market.

N/S Not Specified

C5. Licences and Long-Term Orders to Import Natural Gas as at 31 December 1991

Importer	Licence or Order Number	Point of Import	Term of Licence or Order		Maximum Volumes		
			From	To	Daily (10 ³ m ³)	Annual (10 ⁶ m ³)	Term (10 ⁶ m ³)
B.C. Gas Inc.	GL-123(a)	Huntingdon, BC.	1989-11-09	1992-04-30	1703.0	61.3	184.0
Canadian Western Natural Gas Company Limited	GO-117-88	Coutts, Alta.	1989-01-01	2005-12-31	30.0	N/S	N/S
Centra Gas Ontario Inc.	GL-130(b)	Rainy River, Ont.	1990-07-27	2005-10-31	640.0	210.0	3 150.0
Centra Gas Transmission Holdings Inc.	GL-30(b)	Rainy River, Ont.	1970-11-01	1995-10-31	1 321.8	344.0	8 498.1
Coastal Gas Marketing Company	GOL-1	Sarnia, Ont.	1991-02-07	2016-02-06	N/S	N/S	N/S
Many Islands Natural Gas (Canada) Limited	GLI-5(c)	Willow Creek, Sask.	1972-03-15	1992-10-31	4 249.2	1 274.8	18 951.3
TransCanada PipeLines Limited	GL-42(d)	Sault Ste. Marie and Sarnia, Ont.	1971-04-15	1971-10-31	N/S	232.8	60 316.5
			1971-11-01	1994-10-31	N/S	2 612.3	
	GOL-2-91(d)	Sault Ste. Marie and Sarnia, Ont.	1991-11-01	2005-10-31	N/S	N/S	N/S
Western Gas Marketing Ltd.	GOL-3-91(b)	Rainy River, Ont.	1991-11-01	1993-10-31	N/S	N/S	N/S

a - This licence authorizes an import of natural gas which the licensee has previously exported for storage in the U.S. The import occurs through exchange arrangements with other exporters.

b - This licence authorizes an import of natural gas which the licensee has exported near Sprague, Man.

c - This licence authorizes an import of natural gas which the licensee will subsequently export near Emerson, Manitoba, pursuant to Licence GL-44.

d - This licence authorizes an import of natural gas which the licensee has previously exported near Emerson, Manitoba. This natural gas serves Canadian markets.

N/S Not specified.

C6. Licences and Long-Term Orders to Export and/or Import Propane, Butanes, Ethane and Ethylene as at 31 December 1991

Exporter	Licence or Order Number	Points of Export	Points of Import	Term of Licence or Order		Maximum Volumes	
				From	To	Annual (10 ⁶ m ³)	Term (10 ⁶ m ³)
PROPANE							
Amoco Canada Petroleum Company Ltd. (Export)	GL-32	Can/US Border (a)		1971-01-01	1972-12-31	92 698	4 281 799
				1973-01-01	1973-12-31	569 761	
				1974-01-01	1974-12-31	519 682	
				1975-01-01	1975-12-31	506 190	
				1976-01-01	1976-12-31	483 571	
				1977-01-01	1977-12-31	456 825	
				1978-01-01	1993-12-31	92 698	
				1994-01-01	1994-12-31	77 206	
Dome Petroleum Limited (Export)	GL-31	Can/US Border (a)		1971-01-01	1972-12-31	133 254	9 757 486
				1973-01-01	1973-12-31	924 999	
				1974-01-01	1974-12-31	870 078	
				1975-01-01	1975-12-31	847 301	
				1976-01-01	1976-12-31	812 936	
				1977-01-01	1977-12-31	775 793	
				1978-01-01	1978-12-31	744 761	
				1979-01-01	1979-12-31	716 983	
				1980-01-01	1980-12-31	688 571	
				1981-01-01	1981-12-31	656 190	
				1982-01-01	1982-12-31	620 476	
				1983-01-01	1986-12-31	133 254	
				1987-01-01	1987-12-31	143 809	
				1988-01-01	1988-12-31	193 016	
				1989-01-01	1989-12-31	196 984	
				1990-01-01	1990-12-31	169 047	
				1991-01-01	1991-12-31	165 873	
				1992-01-01	1992-12-31	165 079	
				1993-01-01	1993-12-31	162 098	
				1994-01-01	1994-12-31	103 968	
ETHANE							
Dome Petroleum Limited (Export)	GL-51 (b)(c)	Export-Elmore, Sask. Windsor, Ont. Re-Export - Windsor, Ont.		1979-06-21	1979-12-31	1 287 000	19 069 000
				1980-01-01	1980-12-31	1 090 000	
				1981-01-01	1981-12-31	935 000	
				1982-01-01	1982-12-31	1 114 000	
				1983-01-01	1983-12-31	1 241 000	
				1984-01-01	1984-12-31	1 424 000	
				1985-01-01	1985-12-31	2 000 000	
				1986-01-01	1986-12-31	2 731 000	
				1987-01-01	1987-12-31	2 304 000	
				1988-01-01	1988-12-31	1 891 000	
				1989-01-01	1989-12-31	1 301 000	
				1990-01-01	1990-12-31	765 000	
				1991-01-01	1991-12-31	602 000	
				1992-01-01	1992-12-31	280 000	
				1993-01-01	1993-12-31	104 000	

C6. Licences and Long-Term Orders to Export and/or Import Propane, Butanes, Ethane and Ethylene as at 31 December 1991 *(Continued)*

Exporter	Licence or Order Number	Points of Export	Import	Term of Licence or Order		Maximum Volumes Annual (m ³)	Term (m ³)
				From	To		
ETHYLENE						Kilograms	
Dow Chemical of Canada Limited (Export/Import)	EYL-2-76 ^(d)	Elmore, Sask. Windsor, Ont.		1978-01-01	1997-12-31	181 438 810	N/S

- a - For each licence or order the Canada/US Border export points include one or more of the following ports: Elmore, Sask., Gretna, Ma Sarnia and Windsor, Ont.
- b - This is an export licence which authorizes the export of ethane at Elmore, Sask., and Windsor, Ont. All or a portion of the quantity of ethane exported at Elmore, Sask., may be imported at Windsor, Ont., for subsequent re-export at Windsor, Ont.
- c - Authorized exports of ethane in each year during the period 1982-01-01 to 1985-12-31 shall be reduced by the equivalent quantity of "make-up" volumes exported under Licence GL-47 which is in excess of 392 728 m³.
- d - This is an export licence which authorizes the export of ethylene at Elmore, Sask., and at Sarnia and Windsor, Ontario. All or a portion of the quantity of ethylene exported at Elmore, Sask., may be imported at Sarnia and Windsor, Ontario for subsequent re-export at Sarnia and Windsor, Ont.
- N/S Not specified

Appendix D

Electricity

D1. Certificates and Orders Issued During 1991 in Respect to International Power Lines

No Certificates or Orders were issued.

D2. Amending Orders Issued During 1991 Relating to International Power Lines

Applicant	Order No.	Issued	Comments
TransAlta Utilities Pipelines Ltd.	AO-2-EC-54	91-07-25	Change in company name

D3. Licences Issued During 1991 Relating to the Export of Electricity

No Licences were issued.

D4. Permits and Orders Issued During 1991 Relating to the Export of Electricity (a) Orders Issued Pursuant to Section 7 of the Part VI Regulations

No Orders were issued.

D4. Permits and Orders Issued During 1991 Relating to the Export of Electricity *(continued)*
(b) Permits Issued Pursuant to the NEB Act Amended 1 June 1990.

Applicant	Permit No.	Class	Kilowatts	Annual Megawatt Hours	Term		Issued
					From	To	
B.C. Hydro	EPE-27	Firm	2 200	1 200	91-12-01	93-09-30	91-09-05
The Canadian Transit Company	EPE-29	Firm	200	50	91-09-01	21-08-31	91-08-22
Detroit and Windsor Subway Company	EPE-26	Firm	400	3 000	91-12-01	21-11-31	91-05-16
Hydro-Québec	EPE-20	Firm	2 000	10 512	91-04-01	21-03-31	91-03-21
Ontario Hydro	EPE-21	Interruptible	-	15 000 000	91-07-31	94-06-30	91-04-24
	EPE-22	Circulating Energy	-	10 000 000	96-01-31	25-12-31	91-04-24
	EPE-23	Firm	112 000	13 200 000	91-07-31	92-10-31	91-04-24
	EPE-24	Firm	3 000	15 000	91-07-31	21-06-30	91-04-24
	EPE-25	Firm	100	200	91-07-31	21-05-31	91-04-24
Manitoba Hydro	EPE-30	Firm	900	7 884 000	91-10-01	94-09-31	91-09-26
N.B. Power	EPE-14	Firm	100 000	876 000	91-02-01	94-10-31	91-01-11
	EPE-15	Interruptible	-	6 482 400	91-02-01	00-10-31	91-01-11
	EPE-16	Interruptible	-	400 000	91-02-01	00-10-31	91-01-11
	EPE-17	Carrier Transfer	50 000	250 000	91-02-01	02-07-31	91-01-11
	EPE-18	Interruptible	-	179 000	91-02-01	00-10-31	91-01-11
	EPE-19	Firm	23 000	201 480	91-02-01	94-10-31	91-01-11
	EPE-28	Firm	1 000	1 000	91-10-21	21-10-20	91-07-11

D4. Permits and Orders Issued During 1991 Relating to the Export of Electricity *(continued)*
(c) Amending Orders Relating to Power and Energy

Applicant	Order No.	Issued	Comments
British Columbia Hydro and Power Authority	AO-5-EL-162	91-07-18	Modification to the term of the licence.
	AO-3-EL-163	91-07-18	Modification to the term of the licence.
	AO-2-EL-164	91-07-18	Modification to the term of the licence.
	AO-6-EL-162	91-11-28	Modification to the term of the licence.
	AO-4-EL-163	91-11-28	Modification to the term of the licence.
	AO-3-EL-164	91-11-28	Modification to the term of the licence.
	AO-1-ELO-251	91-07-13	Amendment increasing the quantity of power and energy
	AO-1-EPE-02	91-07-13	Amendment increasing the quantity of power and energy
Canadian Niagara	AO-1-EPE-08	91-10-24	Amendment increasing the quantity of power and energy
Hydro-Québec	AO-3-EL-169	91-04-18	Amendment authorizing export over any international power and the price to be charged to be that in the Interconnection agreements
N.B. Power	AO-1-EPE-28	91-11-14	Change of company name

D4. Permits and Orders Issued During 1991 Relating to the Export of Electricity *(continued)*
(d) Revoking Orders Issued pursuant to Article 21

Applicant	Order No.	Issued	Comments
Hydro-Québec	RO-ELO-230	91-03-21	Order revoking order ELO-230 effective 21 March, 1991
	RO-ELO-231	91-03-21	Order revoking order ELO-231 effective 21 March, 1991
	RO-ELO-232	91-03-21	Order revoking order ELO-232 effective 21 March, 1991
	RO-ELO-233	91-03-21	Order revoking order ELO-233 effective 21 March, 1991
	RO-ELO-234	91-03-21	Order revoking order ELO-234 effective 21 March, 1991
	RO-ELO-235	91-03-21	Order revoking order ELO-235 effective 21 March, 1991
	RO-ELO-236	91-03-21	Order revoking order ELO-236 effective 21 March, 1991
	RO-ELO-237	91-03-21	Order revoking order ELO-236 effective 21 March, 1991
	RO-EPE-04	91-03-21	Order revoking order EPE-04 effective 21 March, 1991
	RO-EPE-05	91-03-21	Order revoking order EPE-05 effective 21 March, 1991
	RO-EPE-06	91-03-21	Order revoking order EPE-06 effective 21 March, 1991
Ontario Hydro	RO-ELO-273	91-04-24	Order revoking order ELO-273 effective 24 April, 1991

Appendix E

Financial Regulation

E1. Financial Information - Group 1 Oil Pipeline Companies

(a) (b)	Cochin		Interprovincial		IPL(NW)		Trans Mountain		Trans-Northern		Total
1991	(\$000 000)	(%)	(\$000 000)	(%)	(\$000 000)	(%)	(\$000 000)	(%)	(\$000 000)	(%)	Total
Revenue Requirement											
Return	11.0	36.3	77.9	24.9	39.1	53.8	22.3	25.4	4.6	15.9	154.9
Depreciation	5.2	17.2	42.3	13.5	14.7	20.2	8.3	9.5	2.2	7.5	72.7
Operating & Mtce.	12.7	41.9	136.8	43.7	6.8	9.3	30.0	34.3	18.4	63.3	204.8
Taxes	1.4	4.6	56.1	17.9	12.1	16.7	27.0	30.8	3.9	13.3	100.5
Total	30.3	100.0	313.2	100.0	72.7	100.0	87.6	100.0	29.1	100.0	532.9
Capitalization of Rate Base (c)											
Debt	N/A(d)	N/A	387.2	59.2	190.8	68.5	81.3	50.0	18.6	46.3	677.9
Preferred	N/A(d)	N/A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Common Equity	N/A(d)	N/A	266.9	40.8	87.6	31.5	81.3	50.0	21.6	53.7	457.4
Total	42.1	100.0	654.1	100.0	278.4	100.0	162.6	100.0	40.2	100.0	1177.4
Return on Common Equity											
Approved	N/A(d,e)	N/A	36.0	13.25	14.1	16.00	11.4	14.00	2.8	13.75	
Actual	11.0(f)	26.99	37.4	14.03	14.1	16.00	13.5	16.60	2.5	12.60	
1990	(\$000 000)	(%)	(\$000 000)	(%)	(\$000 000)	(%)	(\$000 000)	(%)	(\$000 000)	(%)	Total
Revenue Requirement											
Return	11.6	37.4	77.3	25.3	40.3	55.4	18.1	23.6	4.0	15.4	151.3
Depreciation	5.2	16.8	40.4	13.2	14.6	20.1	7.5	9.8	2.1	8.1	69.8
Operating & Mtce.	12.9	41.6	134.1	43.9	5.8	8.0	29.0	37.9	16.5	63.5	198.3
Taxes	1.3	4.2	53.5	17.5	12.0	16.5	22.0	28.7	3.4	13.1	92.2
Total	31.0	100.0	305.3	100.0	72.7	100.0	76.6	100.0	26.0	100.0	511.6
Capitalization of Rate Base (c)											
Debt	N/A(d)	N/A	384.0	60.1	201.2	69.5	77.1	50.0	17.1	44.9	679.4
Preferred	N/A(d)	N/A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Common Equity	N/A(d)	N/A	254.8	39.9	88.4	30.5	77.0	50.0	21.0	55.1	441.2
Total	45.3	100.0	638.8	100.0	289.6	100.0	154.1	100.0	38.1	100.0	1165.9
Return on Common Equity											
Approved	N/A(d,e)	N/A	33.8	13.25	14.1	16.00	10.8	14.00	2.9	13.75	
Actual	11.6(f)	25.50	36.6	14.37	14.1	16.00	9.9	12.80	2.1	9.97	

a - Data based on preliminary estimates.

b - Full names of companies are listed on page 117, Appendix A1.

c - Data exclude construction work in progress.

d - Not applicable because company is financed on a joint venture basis.

e - Not applicable because company regulated on a complaint basis.

f - Before interest and taxes.

E2. Financial Information - Group 1 Gas Pipeline Companies

(a) (b)	Alberta Natural Gas		Foothills		TQM		TransCanada		Westcoast		Total
1991	(\$000 000)	(%)	(\$000 000)	(%)	(\$000 000)	(%)	(\$000 000)	(%)	(\$000 000)	(%)	Total
Revenue Requirement											
Return	3.2	11.5	67.4	40.0	46.1	61.9	417.6	34.1	107.6	35.3	641.9
Depreciation	1.4	4.9	19.7	11.7	13.2	17.7	138.7	11.3	32.1	10.6	205.1
Operating & Mtce.	21.3	75.1	52.1	30.9	6.8	9.1	527.8	43.1	108.8	35.8	716.8
Taxes	2.4	8.6	29.3	17.4	8.5	11.4	140.0	11.4	55.9	18.4	236.0
Total	28.3	100.0	168.4	100.0	74.4	100.0	1,224.2	100.0	304.4	100.0	1,799.8

Capitalization of Rate Base (c)

Debt	17.4	65.0	396.8	56.9	259.4	75.0	2,180.0	59.1	555.5	61.5	3,409.2
Preferred	0.0	0.0	123.9	17.8	0.0	0.0	402.1	10.9	31.8	3.5	557.8
Common Equity	9.4	35.0	176.1	25.3	86.5	25.0	1,106.6	30.0	316.2	35.0	1,694.8
Total	26.7	100.0	696.9	100.0	345.9	100.0	3,688.7	100.0	903.6	100.0	5,661.8

Return on Common Equity

Approved	N/A(d)	N/A	25.1	14.25	11.9	13.75	149.9	13.50	42.2	13.75	
Actual	1.3	13.38	25.1	14.25	12.5	14.44	150.6	13.61	42.9	13.65	

1991	(\$000 000)	(%)	(\$000 000)	(%)	(\$000 000)	(%)	(\$000 000)	(%)	(\$000 000)	(%)	Total
Revenue Requirement											
Return	2.6	9.2	76.4	46.6	47.6	68.6	365.5	37.5	95.4	32.8	587.5
Depreciation	1.2	4.2	18.5	11.3	13.1	18.9	118.2	12.1	30.8	10.6	181.8
Operating & Mtce.	22.0	77.7	41.2	25.1	6.4	9.2	363.7	37.3	101.1	34.7	534.4
Taxes	2.5	8.8	27.9	17.0	2.3	3.3	128.0	13.1	63.9	21.9	224.6
Total	28.3	100.0	164.0	100.0	69.4	100.0	975.4	100.0	291.2	100.0	1,528.3

Capitalization of Rate Base (c)

Debt	12.9	65.2	398.4	69.4	267.8	75.0	1,798.6	59.7	506.4	61.0	2,984.1
Preferred	0.0	0.0	0.0	0.0	0.0	0.0	309.6	10.3	33.2	4.0	342.8
Common Equity	6.9	34.8	176.0	30.6	89.3	25.0	903.5	30.0	290.5	35.0	1,466.2
Total	19.8	100.0	574.4	100.0	357.1	100.0	3,011.7	100.0	830.1	100.0	4,793.1

Return on Common Equity

Approved	N/A(d)	N/A	25.1	14.25	12.3	13.75	119.7	13.25	39.9	13.75	
Actual	1.0	12.17	25.1	14.25	13.3	14.87	120.6	13.35	38.0	13.07	

a - Based on preliminary estimates.

b - Full names of companies are listed on page 117, Appendix A1.

c - Excludes construction work in progress.

d - Not applicable as company is regulated on a complaint basis.

Appendix F

Metric Conversion Tables

The **National Energy Board** uses the International System of Units (SI). The energy units most commonly referred to in this report are the gigajoule (GJ) and the petajoule (PJ). A 30-litre gasoline fill-up contains about one gigajoule of energy. A petajoule is one million gigajoules. On average, a city the size of Toronto uses a petajoule of energy for all uses (heat, light, transportation, etc.) about every 15 hours.

The following conversion tables is provided for the convenience of readers who may be more familiar with the Imperial System.

Approximate Conversion Factor

metre (m)	=	3.28 feet
kilometre (km)	=	0.62 mile
millimetre (mm)	=	0.039 inch
cubic metre (m ³) of oil	=	6.3 barrels
cubic metre (m ³) of natural gas	=	35.3 cubic feet
litre (L)	=	0.22 Imperial gallon
kilogram (kg)	=	2.20 pounds
gigajoule (GJ)	=	0.95 thousand cubic feet of natural gas at 1000 Btu per cubic foot or 0.165 barrels of oil, or 0.28 megawatt hours of electricity
petajoule (PJ)	=	one million gigajoules

Abbreviations

gigajoule (GJ)	=	10 ⁹ J
terajoule (TJ)	=	10 ¹² J
petajoule (PJ)	=	10 ¹⁵ J
exajoule (EJ)	=	10 ¹⁸ J
kilowatt (KW)	=	10 ³ watts
megawatt (MW)	=	10 ⁶ W
megawatt hour (MW.h)	=	10 ³ KW.h
gigawatt hour (GW.h)	=	10 ⁶ KW.h
terawatt hour (TW.h)	=	10 ⁹ KW.h

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NATIONAL
ENERGY BOARD

SUPPLEMENT

ANNUAL REPORT

1991

National Energy Board Profile

The National Energy Board is an independent federal regulatory tribunal that was created by an Act of Parliament on 2 November 1959. Since its creation, the Board has played an important role in the development of Canada's energy sector.

The Board's regulatory powers under the *National Energy Board Act* include the granting of authorizations for the exportation of oil, natural gas and electricity, the certification of interprovincial and international pipelines and designated interprovincial and international power lines, and the setting of tolls and tariffs for oil and gas pipelines under federal jurisdiction.

The Act also requires that the Board keep under review the Canadian supply of all major energy commodities, with emphasis on electricity, oil, natural gas, and the by-products derived from oil and natural gas, as well as the demand for Canadian energy in Canada and in export markets.

The Board has specific responsibilities under the *Northern Pipeline Act* and the *Energy Administration Act*. In addition, Board inspectors have been appointed safety officers by the Minister of Labour to administer *Part II* of the *Canada Labour Code*.

In April 1991, regulatory responsibilities of the Canada Oil and Gas Lands Administration for oil and gas exploration and development in frontier lands were transferred to the Board.

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Foreword

This supplement to the National Energy Board's 1991 Annual Report provides year-end information on the trade in Canadian oil, natural gas and electricity, and contains statistics on energy supply and demand as well as data on oil and gas exploration and development in Canada.

The report also includes a number of tables giving detailed statistics on exports and imports of oil, natural gas and electricity by company.

Information on energy trade included in this supplement was not available at the time the Board's 1991 annual report was published in April of this year. Copies of the annual report are available by contacting the Board at the address and telephone number provided on the Profile page.

Calgary, Alberta
August, 1992

Energy Developments

International Oil Prices

Over the past 20 years, periodic episodes in world oil markets have had important implications for Canadian energy supply and demand. Most recently, the 1990 invasion of Kuwait caused a sharp, although brief, rise in world crude oil prices in the latter half of 1990. Following Iraq's expulsion from Kuwait, world crude prices declined to about pre-invasion levels.

In 1991, the West Texas Intermediate (WTI) crude price at Cushing, Oklahoma, averaged \$US 21.50 per barrel, 12 percent below its 1990 average of \$US 24.50. On January 16, 1991, the first day of Allied bombing of Iraq, the WTI spot price reached its peak for the year at \$US 32.00 per barrel. However, by January 31 the price had fallen to \$US 21.55. Over the remainder of 1991, WTI ranged, on a monthly basis, between \$US 19.50 and \$US 23.50 per barrel.

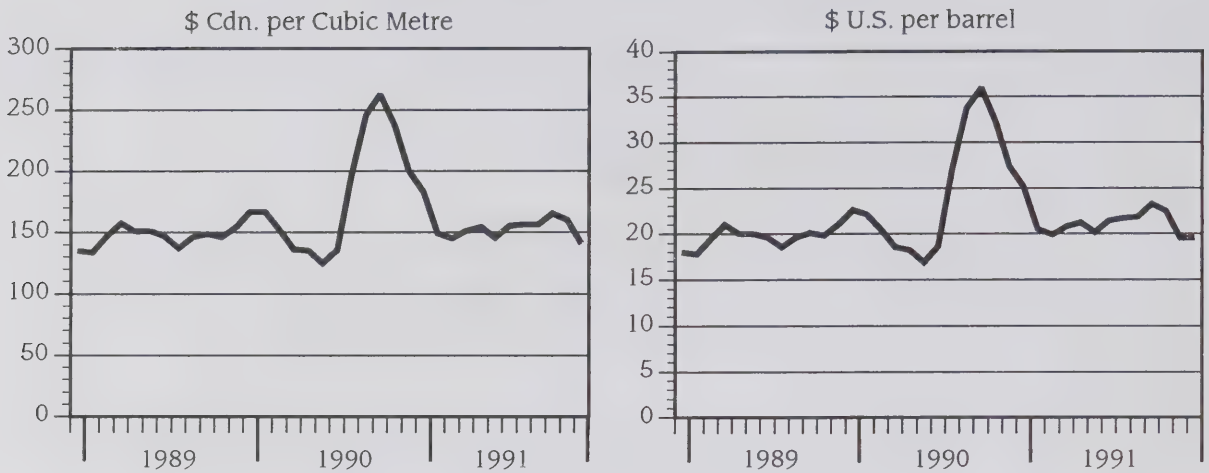
World oil demand (including demand in the former centrally planned economies) rose by 300 000 barrels per day in 1991 to 66.4 million barrels per day. Consumption by the member countries of the Organization of Economic Cooperation and Development (OECD) rose by 100 000 barrels per day to 38 million barrels per day as declining demand in North America was more than offset by increases in the European and Pacific regions of the OECD. Strong growth in China and Asia helped raise total non-OECD oil consumption by 200 000 barrels per day to 28.4 million barrels per day.

Total crude production by all countries outside the Organization of Petroleum Exporting Countries (OPEC) fell by 400 000 barrels per day to 41.5 million barrels per day. American and Norwegian supply increased while in the former USSR oil production is estimated to have fallen by more than 1 million barrels per day in 1991 compared to 1990, a decline of nine percent.

OPEC crude oil production averaged 23.4 million barrels per day in 1991, compared with 23.1 million barrels per day in 1990. Saudi Arabia raised production to 8.4 million barrels per day compared with 4.9 million barrels per day as recently as 1989. The trade embargo on Iraq and post Gulf war production difficulties in Kuwait limited supply from those two countries to 300 000 and 100 000 barrels per day, respectively. Prior to Iraq's invasion of Kuwait, Iraqi production was nearly 3 million barrels of crude oil per day while Kuwait produced about 1.5 million barrels per day.

Figure 1

Average Price of WTI at Cushing



U.S Natural Gas Prices

The natural gas prices that are relevant to Canada's international trade are those in the United States. In this connection, the following comments outline the overall North American gas situation in 1990 and 1991, indicating price changes in some of the specific U.S. markets served by Canadian natural gas.

During 1991, the average U.S. wellhead price declined to \$US 1.59 per thousand cubic feet, from \$US 1.71 per thousand cubic feet in 1990, a drop of seven percent. As well, the average city-gate price declined by nearly four percent, to \$US 2.91 per thousand cubic feet.

Prices generally fell in the market areas where Canadian exports compete with U.S. natural gas, thus resulting in lower netbacks to Canadian producers. As reported by the United States Department of Energy, city-gate prices in California declined by about three percent in 1991, to \$US 2.80 per thousand cubic feet. In the Pacific Northwest, they were down by approximately one percent to \$US 2.15 per thousand cubic feet. Prices in the Central Region were virtually unchanged in 1991 at \$US 3.09 per thousand cubic feet. In the Northeast, prices fell to \$US 3.23 per thousand cubic feet or about three percent.

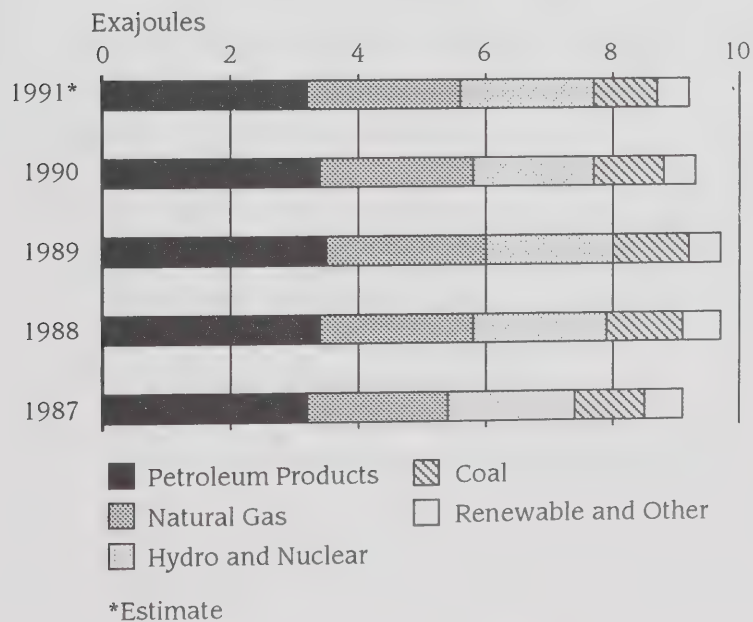
Energy Production, Consumption and Trade

A strong increase in Canadian net energy exports more than offset a decline in domestic energy consumption, resulting in higher energy production in 1991 compared to 1990.

Primary energy consumption in Canada in 1991 was 0.7 percent below the 1990 level. Petroleum product demand, which accounts for about a third of total Canadian consumption, showed the largest decline, falling by more than five percent. Natural gas demand was virtually unchanged from its 1990 level, while hydroelectric and nuclear power consumption rose by 3.9 percent and 16.3 percent, respectively.

The total export volume of crude oil and refined petroleum products was 2 501 petajoules in 1991, a 14.6 percent increase over the 1990 level. Export revenue rose from \$9.3 billion in 1990 to \$9.6 billion in 1991. The imported volume of crude oil and refined petroleum products decreased by 7.3 percent to 1 338 petajoules in 1991, while its cost fell by more than 23 percent to \$5.2 billion. The net export volume of crude oil and refined petroleum products rose by more than 55 percent from 747 petajoules in 1990 to 1 163 petajoules in 1991. Net export revenue from crude oil and refined petroleum products also increased by about 55 percent from \$2.8 billion in 1990 to \$4.4 billion in 1991.

Figure 2
Canadian Energy Consumption



Natural gas exports continued the rising trend which began in 1986. In 1991 gas export volumes increased by about 16 percent over the 1990 level to a record 1 808 petajoules. In 1991 the average gas export price was \$1.99 per gigajoule compared with \$2.11 per gigajoule in 1990 and net export revenues increased from \$3.2 billion to \$3.5 billion. The import volume of natural gas, all from the U.S., was 21 petajoules.

The volume of electricity exports rose by more than 20 percent to 71 petajoules and thereby reversed a declining trend that had begun in 1987. Firm sale volumes increased by one percent while interruptible sale volumes rose by nearly 42 percent, generating export revenues of \$557 million. The volume of electricity imports declined from 56 petajoules in 1990 to 6 petajoules in 1991. Consequently, net electricity export volumes increased from virtually zero in 1990 to 64 petajoules in 1991 while net export revenues were \$487 million in 1991.

Table 1
Canadian Trade in Petroleum, Natural Gas and Electricity
(Petajoules and Billions of Dollars)

	1989		1990		1991 ^(e)	
	PJ	\$Billions	PJ	\$Billions	PJ	\$Billions
Exports						
Petroleum ^(a)	2139	7.0	2183	9.3	2501	9.6
Natural Gas	1432	3.0	1537	3.3	1808	3.6
Electricity ^(b)	66	0.7	59	0.5	71	0.6
Total Exports	3637	10.7	3779	13.1	4380	13.8
Imports						
Petroleum ^(a)	1506	5.3	1436	6.5	1338	5.2
Natural Gas	46	0.1	28	0.1	21	0.1
Electricity ^(b)	31	0.3	56	0.6	6	0.1
Total Imports	1583	5.7	1520	7.2	1365	5.4
Net Export Total	2054	5.0	2259	5.9	3015	8.4

The numbers in this table have been rounded.

(e) Estimate

(a) Includes petroleum products and natural gas liquids. Excludes exchanges between Canada and the United States.

(b) Electricity is converted at 3.6 petajoules per terawatt hour on the basis of the energy content of the electricity output. Excludes exchanges between Canada and the United States.

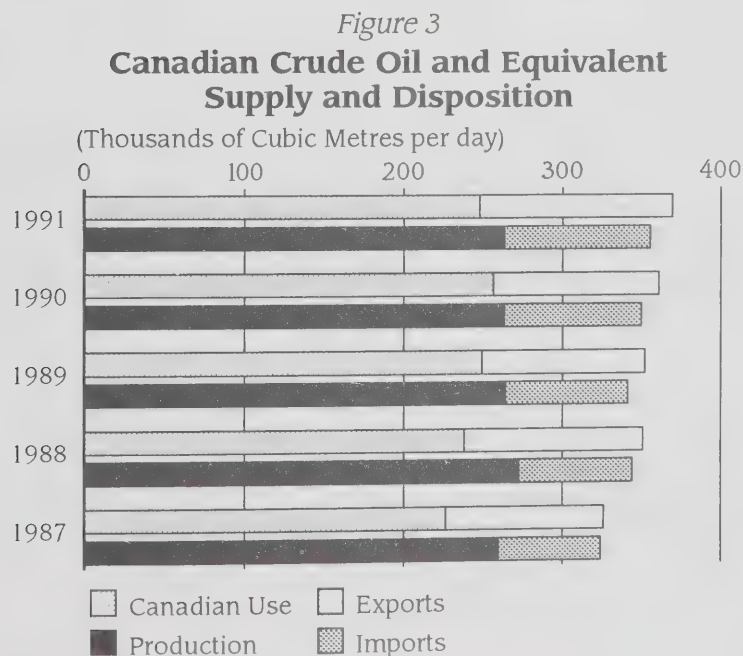
Crude Oil and Petroleum Products

Production of Canadian Crude Oil

Crude oil production in Canada (including conventional light and heavy crude oil, bitumen, pentanes plus and synthetic crude oil) averaged approximately 263 400 cubic metres per day in 1991, the same as the 1990 level.

The supply of conventional light crude oil continued the declining trend which began in 1988, averaging 135 900 cubic metres per day, a decline of three percent from 1991's average supply of 140 400 cubic metres per day.

In 1991, synthetic crude oil production from the Syncrude and Suncor mining plants averaged about 35 900 cubic metres per day, nine percent higher than in 1990 (32 800 cubic metres per day). The Newgrade Upgrader produced 6 800 cubic metres per day of synthetic crude oil. Of this approximately 2 000 cubic metres per day was marketed as synthetic crude oil (as compared with 1 500 cubic metres per day last year), while the remainder was used directly by the adjoining refinery to produce refined petroleum products.



Total pentanes plus production was approximately 19 200 cubic metres per day in 1991, of which about 12 000 cubic metres per day was used as diluent for heavy crude oil and bitumen. Pentanes plus supply increased four percent over the 1990 level (18 500 cubic metres per day) and diluent use also increased by three percent.

The supply of blended heavy crude (which includes conventional heavy crude oil, bitumen and the 64 percent of pentanes plus supply used as diluent) averaged about 84 600 cubic metres per day in 1991, an increase of less than two percent over the final 1990 level (83 600 cubic metres per day). A small decrease of bitumen production because of low prices for this product was more than offset by an increase in conventional heavy production.

Oil Refining

In 1991, the demand for main petroleum products in Canada fell by about five percent, with significant declines in heavy fuel oil and aviation turbine fuel. Demand for motor gasoline and middle distillates also fell, by two and three percent respectively. Refinery production declined by five percent and imports of main petroleum products fell by thirty-five percent. Exports of main petroleum products, however, rose by one percent.

Canadian refineries received domestic crude oil at a rate of 144 200 cubic metres per day, a decline of 13 percent from 1990, while receipts of foreign crude oil rose by seven percent to 91 900 cubic metres per day.

Crude Oil Imports

In 1991, crude oil imports represented 39 percent of total refinery feedstock requirements in Canada, compared with 34 percent in 1990. On a regional basis, the Atlantic region depended totally on foreign crude oil. Quebec imported nearly 94 percent of its total requirements while, in 1990, it imported approximately 74 percent of its total needs. The increase reflects the shut-down of the Sarnia to Montreal pipeline in mid-1991. Ontario continued to import a small quantity from the United States.

Canada imports crude oil from a variety of sources, including some within OPEC. Crude oil originating from OPEC countries represented 32 percent of total imports in 1991, identical to the 1990 level. North Sea crudes amounted to 60 percent of total crude oil imports, down from 62 percent in 1990. Crude oil imports from other sources equalled eight percent, up two percent from 1990.

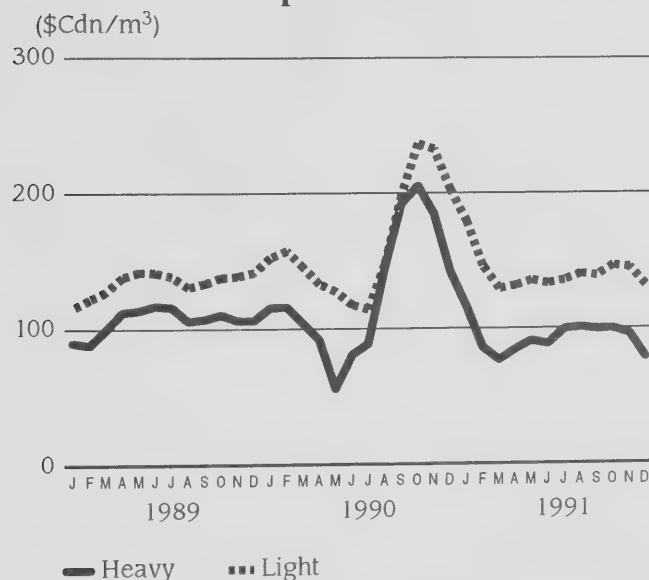
Crude Oil Exports

Total crude oil exports, including synthetic crude oil, were 121 900 cubic metres (768 thousand barrels) per day, up 17 percent from the 1990 level of nearly 104 200 cubic metres (656 thousand barrels) per day. The 1991 total was comprised of about 62 300 cubic metres (392 thousand barrels) per day of light crude oil and equivalent and nearly 59 600 cubic metres (375 thousand barrels) per day of blended heavy crude oil. The estimated value of crude oil exports in 1991 was \$5.2 billion compared with \$5.5 billion in 1990. The lower value in 1991 reflects the decline in prices from the relatively high levels experienced during the second half of 1990 which, in turn, resulted from the conflict in the Persian Gulf.

The American midwest continued to be Canada's most important market. Smaller volumes were shipped to the American west coast, and to the Far East and American Gulf Coast from Vancouver.

The largest export buyers of light Canadian crude oil in 1991 were Amoco, Clark Oil, Conoco, Mobil, Sun Refining, Ashland and United Refining; for heavy Canadian crude oil, the largest foreign buyers were Koch, Mobil, Amoco and Exxon.

Figure 4
**Light and Heavy Crude Oil
Export Prices**

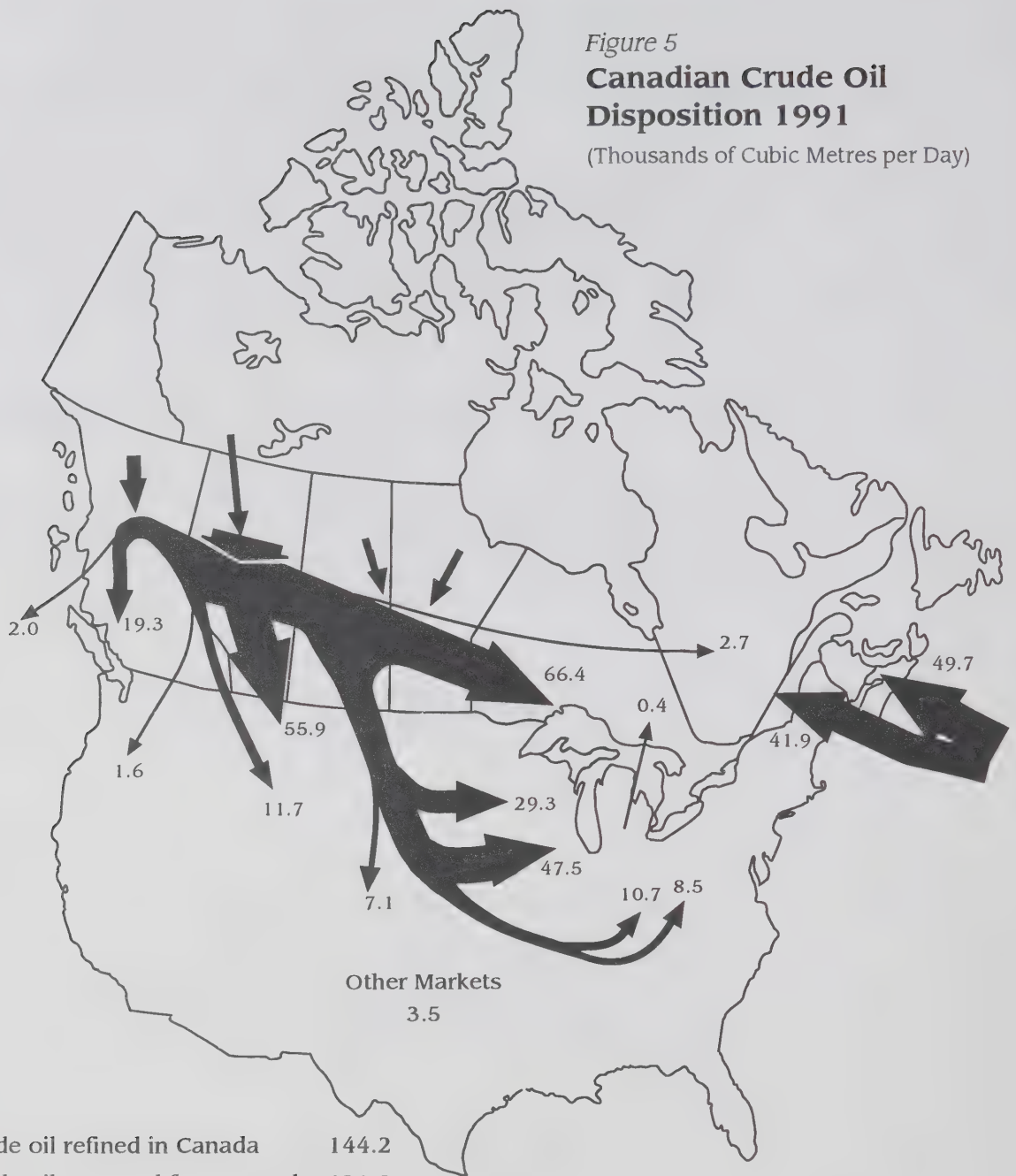


- 1) Prices are not adjusted for quality.
- 2) Light prices are at Edmonton while heavy prices are at Hardisty.

Figure 5

Canadian Crude Oil Disposition 1991

(Thousands of Cubic Metres per Day)



Domestic crude oil refined in Canada 144.2

Domestic crude oil exported from Canada 121.9

Imported crude oil refined in Canada

North Sea 54.7

Western Hemisphere 7.7

Middle East 14.1

Other 15.4

Total 91.9

Main Petroleum Product Imports

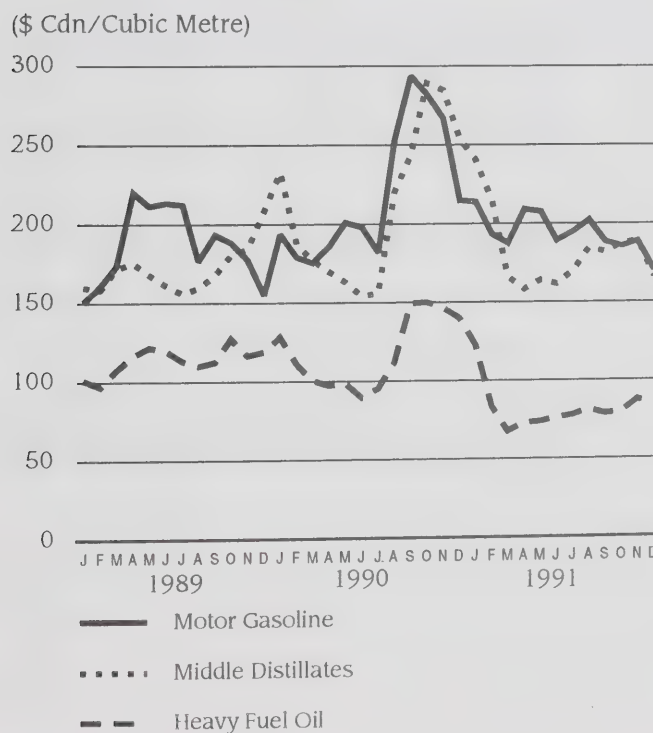
In 1991, imports of main petroleum products averaged 12 600 cubic metres (79 thousand barrels) per day, a decrease of 35 percent from 1990. The bulk of this decline occurred in motor gasoline and jet fuel. The decrease in receipts of motor gasoline occurred in Ontario and Quebec while the decline in jet fuel imports occurred in eastern Canada, including Ontario, and in British Columbia.

Main Petroleum Product Exports

Exports in 1991 of main refined petroleum products and partially processed oil increased one percent to 34 400 cubic metres (217 thousand barrels) per day. A 12 percent increase in shipments of motor gasoline and middle distillates was roughly offset by a decline in the exports of other petroleum products. On a regional basis, exports from the Atlantic Provinces declined but these were offset by similar increases from Ontario and British Columbia. The Atlantic Provinces represented about 53 percent of the total exports.

The United States continued to be Canada's largest buyer of petroleum products, receiving almost 87 percent of our total exports compared with 96 percent in 1990. Exports were also made to the Far East and Europe. In the United States, the east coast continues to be the largest recipient of Canadian refined

Figure 6
**Main Petroleum Products
Average F.O.B. Export Price**



petroleum products, followed by the midwest. The largest exporters of main petroleum products were Newfoundland Processing, Imperial Oil, Irving Oil, Shell Canada and Noco Energy.

The estimated value of main petroleum product exports, including partially processed oil, in 1991 was \$1.5 billion, roughly equal to the 1990 level. This value excludes product exports from crude oil processing agreements for which prices are not assigned.

Table 2
Petroleum Product Exports, 1991
(Thousands of Cubic Metres)

	Motor Gasoline	Middle Distillates	Aviation Turbine Fuel	Heavy Fuel Oil	Partially Processed Oil	Total(a)
Atlantic	2 193	2 750	288	1 192	169	6 592
Quebec	73	476	16	292	39	896
Ontario	875	1 104	7	744	–	2 730
Prairies	315	433	99	35	–	882
British Columbia	791	509	97	15	31	1 443
Total	4 247	5 272	507	2 278	239	12 543

(a) Excludes propane, butanes, lubricants, greases and asphalt.

Oil Pipeline Capacity

During 1991, Interprovincial Pipe Line Inc. (IPL) operated at capacity on the Edmonton to Sarnia part of its system. The volumes nominated on the system exceeded capacity throughout 1991, resulting in monthly apportionment ranging from a low of eight percent to a high of 36 percent. On 3 March 1991, a break occurred on Lakehead's 34 inch pipeline in Minnesota which resulted in IPL's line 3 being shut down for four days. When it returned to service, the operating pressure was temporarily reduced which, in turn, decreased the sustainable capacity.

The leak on the Lakehead system and the apparent overnominations to the system significantly affected the level of apportionment. New procedures developed by IPL and the industry to reduce apportionment were implemented on a trial basis in early 1992.

In July 1991, IPL's line 9 from Sarnia to Montreal was shut down because of the decreasing availability of Canadian light crude oil and the availability of lower priced offshore crude oil.

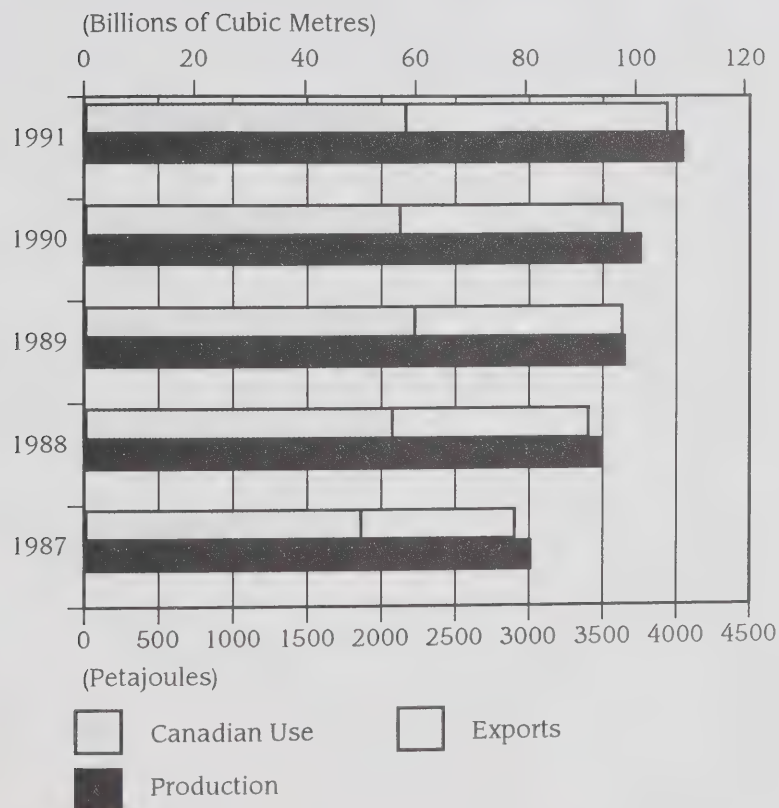
Trans Mountain Pipe Line Company Ltd. generally had space available on its system during 1991.

Natural Gas

Domestic Supply and Demand

Marketable natural gas production in Canada is estimated to have been 108.8 billion cubic metres in 1991. This represents an increase of about eight percent over the 1990 production volumes of 101 billion cubic metres. The increase in total Canadian production is primarily attributable to a large increase in production from British Columbia and also, to a lesser extent, an increase in Alberta production. British Columbia production increased due to the relaxation of allowable restrictions and the contribution from new pools in the Klua, Hamlet North and Sukunka fields.

Figure 7
Natural Gas
Supply and Disposition



Imports of natural gas in 1991 were 547.4 million cubic metres, representing a decrease of 26 percent from the 1990 level of approximately 742.5 million cubic metres. The decrease in natural gas imports reflected increased purchases of Alberta spot gas in lieu of American spot gas for storage during the summer months. The Board issued 17 short-term import orders compared with 38 import orders issued in 1990. Seventy-five percent of the gas imported entered Canada through the St. Clair Pipelines Ltd. pipeline in Ontario which connects the Union Gas Limited and Michigan Consolidated Natural Gas pipeline systems. Twelve percent of the gas imported into Canada entered Canada near Windsor, Ontario at the interconnection of the Union Gas Limited and Panhandle Eastern Pipe Line Company's systems.

In 1991, domestic gas sales were 54.7 billion cubic metres compared with 54.5 billion cubic metres in 1990.

Residential and commercial gas demand rose in 1991 in response to lower winter temperatures, particularly in Ontario and Saskatchewan. Taken together, industrial and direct sales were unchanged in 1991 compared to 1990 as increases in Saskatchewan were offset by declines in British Columbia and Alberta.

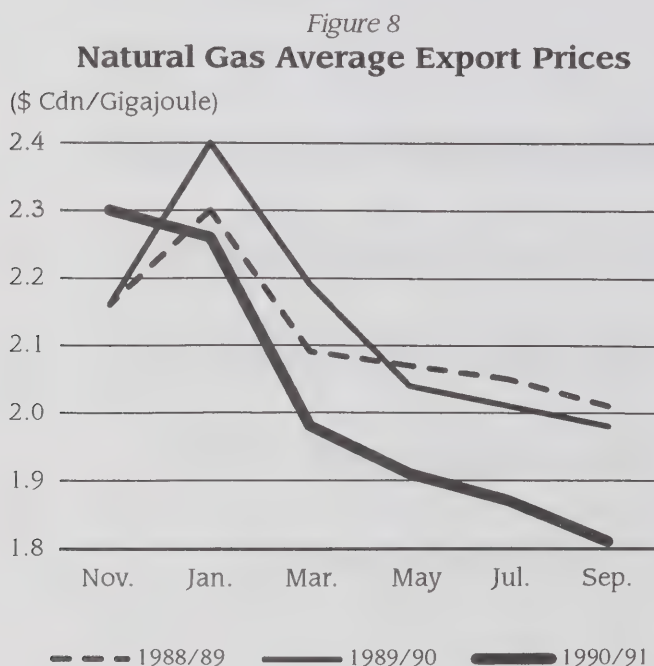
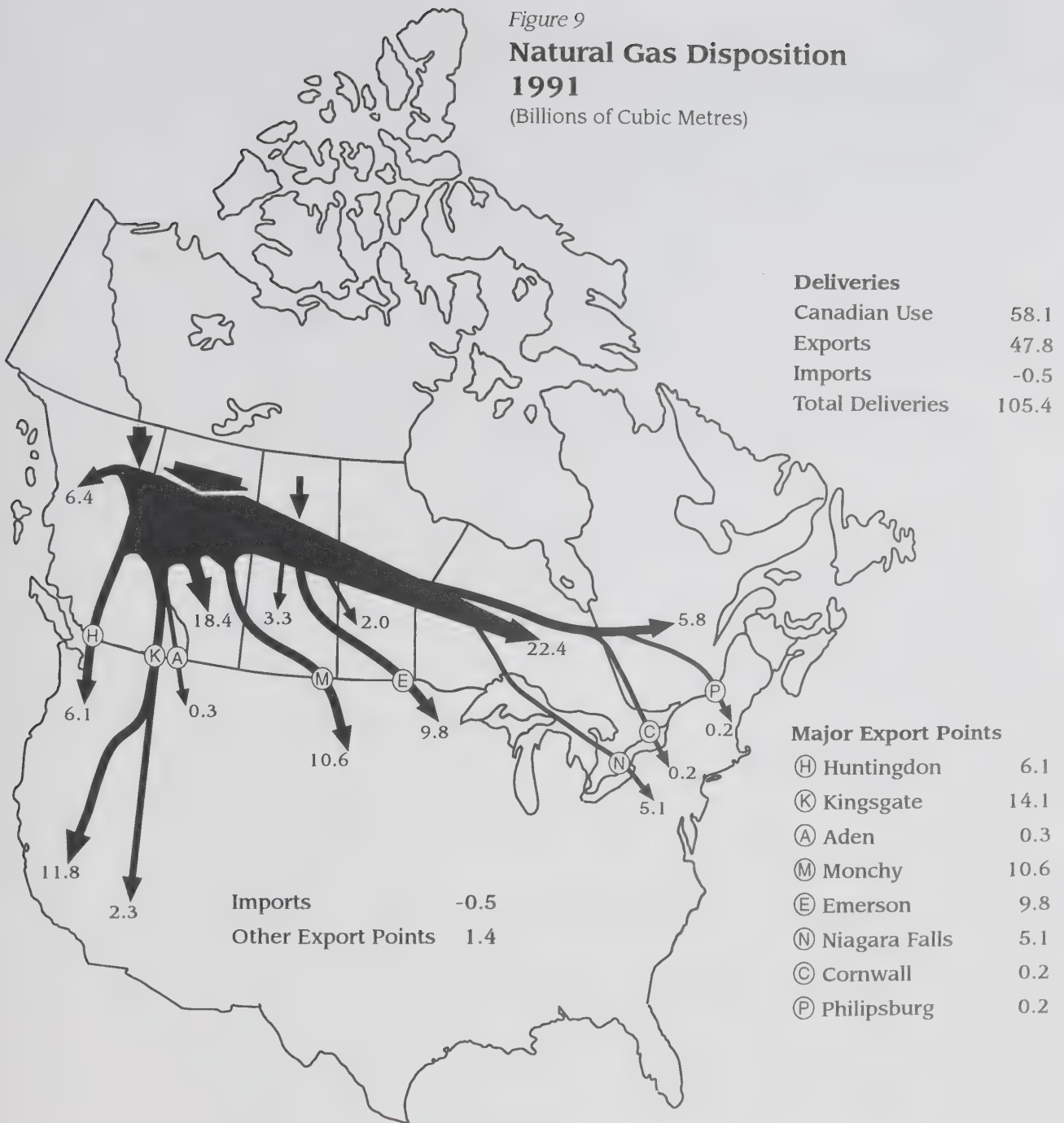


Figure 9

Natural Gas Disposition 1991

(Billions of Cubic Metres)



Exports

Gas exports to the United States rose by about 17 percent in 1991 from 40.7 billion cubic metres (1.44 trillion cubic feet) to 47.8 billion cubic metres (1.69 trillion cubic feet).

Total gas export revenues also increased, by about 10 percent, from \$3.3 billion in 1990 to \$3.6 billion in 1991.

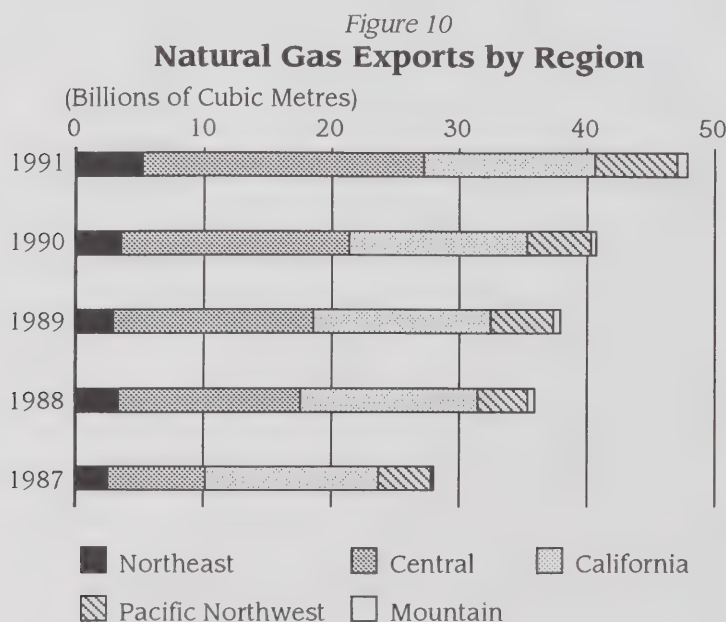
The average price per gigajoule received for natural gas exports decreased by 5.7 percent, from \$2.11 in 1990 to \$1.99 in 1991.

The Central Region of the United States accounted for 46 percent of Canada's 1991 gas export sales, California 28 percent, the Pacific Northwest 13 percent, the Northeast 11 percent, and the Mountain Region 2 percent.

The Central Region was responsible for the bulk of the year-over-year increase in export volumes and most of the remainder of the increase came from the Northeast and the Pacific Northwest regions. In 1991, the Canadian share of the U.S. gas market represented 8.6 percent of consumption.

The sales of Canadian gas exported under short-term orders increased to 22.9 billion cubic metres (808 billion cubic feet) in 1991 from 14.5 billion cubic metres (512 billion cubic feet) in 1990. Short-term sales accounted for about 48 percent of total natural gas exports in 1991, compared to 36 percent in 1990. It should be noted that some export volumes were flowing under short-term orders instead of long-term licences pending the construction of facilities and the receipt of regulatory approvals.

The completion of new pipeline facilities in 1991 provided for additional capacity which facilitated the sales of Canadian gas to the export market.



Natural Gas Pipeline Capacity

During 1991, there was little spare capacity on any of the major gas pipelines in Canada. The Board approved a major mainline pipeline expansion application by TransCanada PipeLines Limited, consisting of approximately 1200 kilometres of pipeline and 17 compressor units. The Board also approved two mainline looping and two gathering pipeline applications by Westcoast Energy Inc., totalling approximately 160 kilometres of pipe.

The Board held a public hearing in 1991 on an application by TransCanada PipeLines Limited to construct a further 300 kilometres of pipeline. The Board also conducted a written hearing on a proposal by Alberta Natural Gas Company Ltd. to expand its capacity by 24.7 million cubic metres (872 million cubic feet) per day through the addition and modification of compression facilities at its three existing compressor stations in southern British Columbia. The expansion is intended to serve new markets in California and the U.S. Pacific Northwest. The Board approved both applications in the spring of 1992.

The Board also received an application from Altamont Gas Transmission Canada Limited for a 300-metre segment of 762-millimetre diameter pipe to be constructed at the Alberta/Montana border. That segment of pipe is one link in a proposed pipeline system intended to transport 20.8 million cubic metres (734 million cubic feet) per day of Canadian-sourced natural gas to markets in the western U.S., primarily in California.

Natural Gas Liquids

The total production of natural gas liquids from gas plants and refineries in 1991 was 27.1 million cubic metres. Ethane production was 11.1 million cubic metres, propane production was 9.5 million cubic metres, and butanes production was 6.5 million cubic metres. The production of ethane increased eight percent over the previous year whereas the supply of propane and butanes increased by two percent and 33 percent respectively. The change in the reported supply of butanes does not affect the available supply as the increase merely reflects the fact that refinery produced butanes used as refinery feedstock are now included as supply. This feedstock volume, which is mainly used for gasoline blending, was previously subtracted from the supply of refinery butanes but has now been included in supply because new reporting procedures made it impossible to quantify this volume. This treatment of refinery feedstock volumes is now similar to the treatment of natural gas liquids injected into oil pools to enhance recovery, which the Board takes into account on both the supply side and demand side of the supply/demand balance.

Total exports of natural gas liquids during 1991 were 6.7 million cubic metres (42 million barrels). Ethane exports were 0.6 million cubic metres (4 million barrels), propane exports were 3.7 million cubic metres (23 million barrels) and butanes exports were 2.4 million cubic metres (15 million barrels). During 1991,

ethane exports declined by 25 percent from 1990, propane shipments rose marginally, and butanes exports fell by seven percent.

The American midwest continued to be Canada's largest market for propane and butanes receiving almost 70 percent of the total export volume. Smaller amounts were delivered to the American east and west coasts.

The largest exporters of propane were Amoco, Petro-Canada, Imperial Oil and Shell Canada while the major exporters of butanes were Amoco, Petro-Canada, Shell Canada and PanCanadian.

The estimated value of natural gas liquids exports in 1991 was \$0.7 billion compared with \$0.8 billion in 1990. The decline reflects lower export levels.

Electricity

Generating Capacity

In 1991, Canada's total net generating capacity was approximately 104 631 megawatts, an increase of about 1 684 megawatts, or about 1.6 percent over 1990.

Generation and Consumption

Total generation of electricity in 1991 was an estimated 489 000 gigawatt hours, up five percent from 1990. Of Canada's total generation, 63 percent was supplied from hydroelectric generation, 21 percent from conventional thermal generation and 16 percent from nuclear generation. Total Canadian consumption in 1991 is estimated to have been 470 000 gigawatt hours, which is virtually unchanged from 1990. Figure 11 shows the supply and disposition of electricity for the past five years.

Exports

Electricity export sales rose in 1991, reversing the decline experienced in each year from 1987 to 1990. This increase, which returned exports to a level exceeding 1989 sales, was due to improved hydro conditions and increased market demand. Total sales were 19 828 gigawatt hours, an increase of 20.2 percent from 1990. Firm sales were essentially unchanged with only a 1.0 percent increase over 1990 while interruptible sales showed a 41.6 percent increase. The total 1991 export revenue of \$557.3 million only increased 1.9 percent over the previous year, reflecting the reduction of over 15 percent in the average price per kilowatt hour.

All the major exporting utilities except NB Power increased their exports over 1990 quantities. Both Ontario Hydro and Hydro-Québec showed dramatic increases in their interruptible exports of 234 percent and 327 percent respectively, whereas firm exports declined by six percent and 73 percent respectively. Manitoba Hydro had increases of 210 percent in its firm exports and 50 percent in its interruptible sales. BC Hydro had a better year overall than in 1990 with an increase in interruptible sales of 43 percent and a small decrease in firm quantities.

Hydro still remains the leading source of production for all exports of electricity. Its share increased to 71 percent in 1991, which is close to its historic level, from 63 percent in 1990. Other fuels used to produce electricity for export were: nuclear at 11 percent, imported coal at eight percent, Canadian coal at three percent and natural gas at two percent.

Tables 14 and 15 in the Appendices show the origin and destination of all exports, by exporting province and importing region or state. As was the case in 1989 and 1990, the New England region was the leading import area, accounting for about 38 percent of all Canadian electricity exports.

Imports

Imports, which during 1989 and 1990 played a large role in electricity trade, returned to a more historic level in 1991. In 1990 purchases from the U.S. reached a record of 15 543 gigawatt hours due to significant imports by Ontario Hydro to offset reduced nuclear plant production caused by extended unit outages. With the drop in U.S. purchases by Ontario Hydro in 1991, total Canadian imports fell to 1 688 gigawatt hours. The associated cost of imports in 1991 was \$70 million, a marked decline from \$556 million in 1990. Figure 12 shows the exports and imports in 1991 as well as interprovincial transfers.

Net exports in 1991 were 18 140 gigawatt hours composed of exports of 19 828 gigawatt hours and imports of 1 688 gigawatt hours. This is the highest level of net exports since 1988.

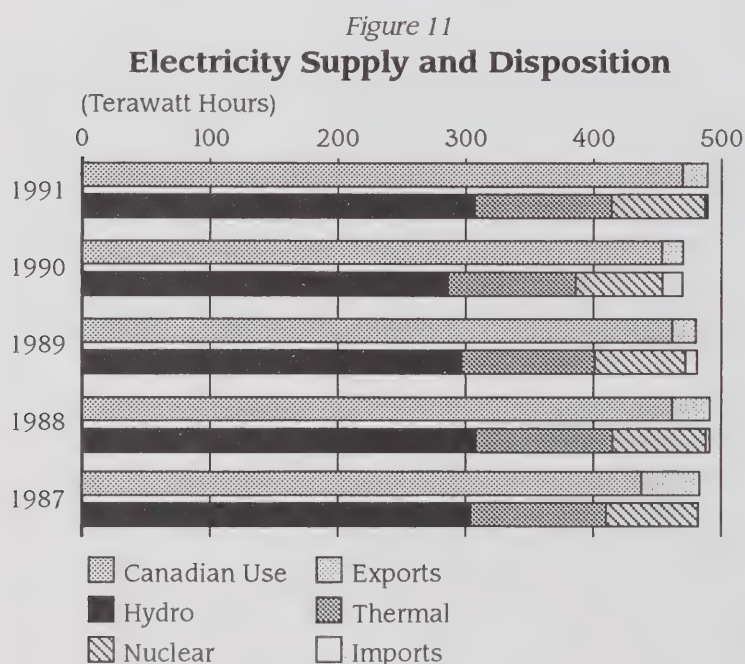


Figure 12

International and Interprovincial Transfers of Electricity (Gigawatt Hours)



Note: Data for interprovincial transfers of electricity are compiled from "Statistics Canada Electric Power Statistics Monthly."

All data is for 1991 (Includes exchanges).

Oil and Gas Activity and Reserves

Exploration and Development Activity

Overall activity of the Canadian oil and gas industry decreased marginally in 1991 compared with the level of activity in 1990. Exploration activity during 1991 declined because of continuing uncertainty about future oil prices, low gas prices due to persistent oversupply of natural gas, declining cash flows and more attractive opportunities overseas.

Canadian oil and gas industry spending at provincial and federal land sales totalled \$384 million in 1991, the lowest amount since 1986 and down 36 percent from the nearly \$600 million spent in 1990. The provincial and federal governments leased the mineral rights to 2.78 million hectares during 1991 compared to 3.61 million hectares in 1990. The average price per hectare in 1991 was \$138, down nearly 17 percent from \$166 per hectare in 1990 but up slightly from an average of \$134 per hectare in 1989. Figures 13 and 14 summarize land sale activity for the past five years.

Figure 13

Land Sales

(Millions of Hectares Leased)

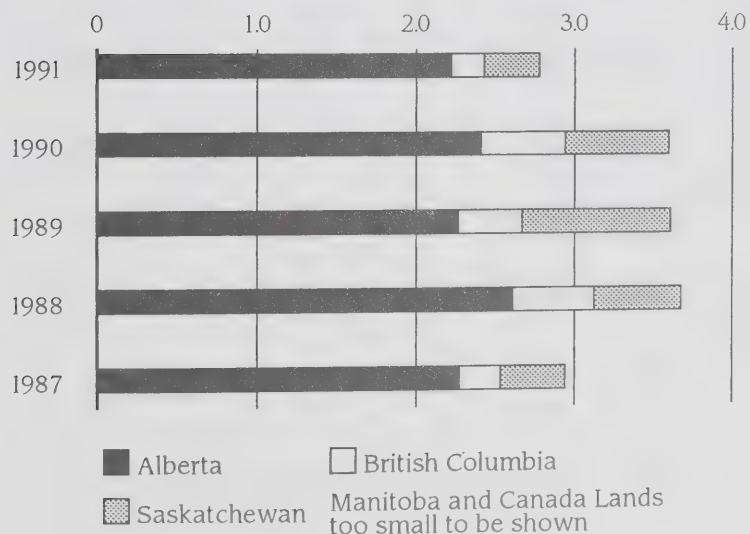


Figure 14
Land Sales

(Total Bonuses-Millions of Dollars)

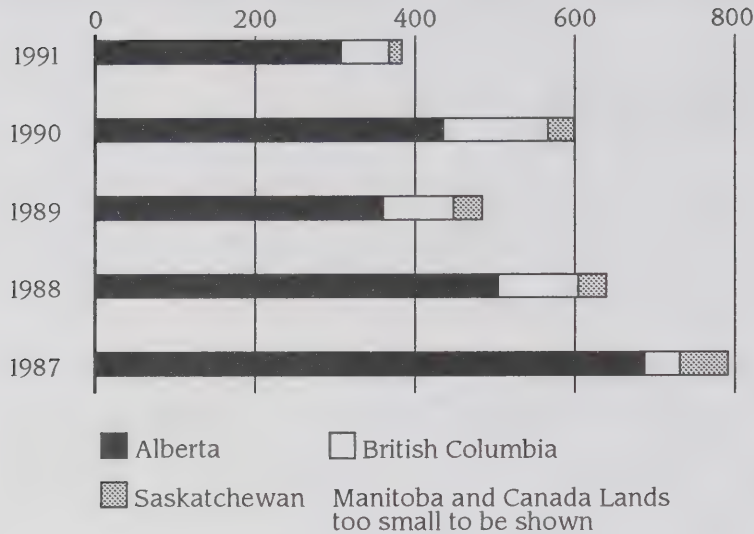
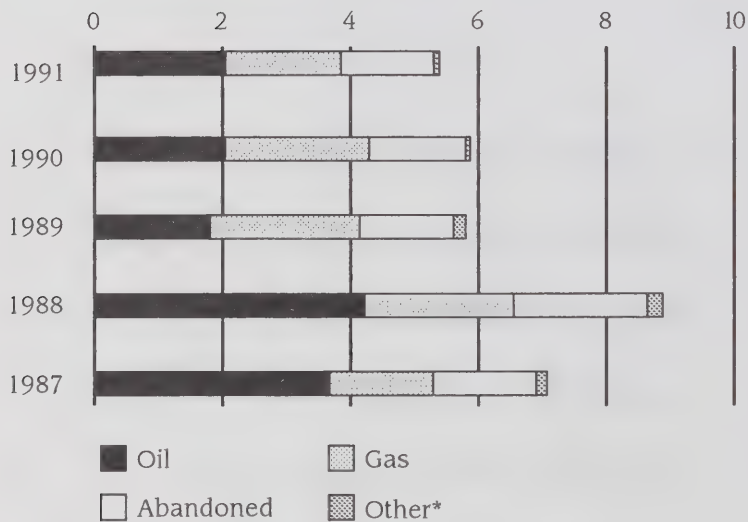


Figure 15
Canadian Wells Drilled
(Thousands)



* Includes suspended, service and miscellaneous wells

The number of wells drilled decreased by nine percent to about 5 400 wells in 1991, compared with 6 000 wells in 1990 (Figure 15).

The decrease in drilling activity during 1991 can be totally attributed to a decrease in gas-directed drilling. Gas wells in Alberta were 32 percent of all completions in 1991 compared with 40 percent in 1990. Saskatchewan gas wells were 40 percent of total completions in 1991 and 39 percent in 1990. British Columbia gas wells accounted for 42 percent of all completions in 1991 versus 55 percent in 1990. Oil wells accounted for a greater share of total well completions in most provinces in 1991 because oil prices were relatively stronger than natural gas prices.

Drilling rig activity in 1991, on average, decreased by eight percent from the level of activity observed during 1990 (Figure 16). As usual, activity peaked during the winter season.

The winter rig activity during the first two months was slightly higher than the activity during the same time period in 1990. However, a lower level of rig activity occurred in most of the remaining months during 1991.

Figure 16
Canadian Rig Activity
(Number of Rigs Drilling per Week)

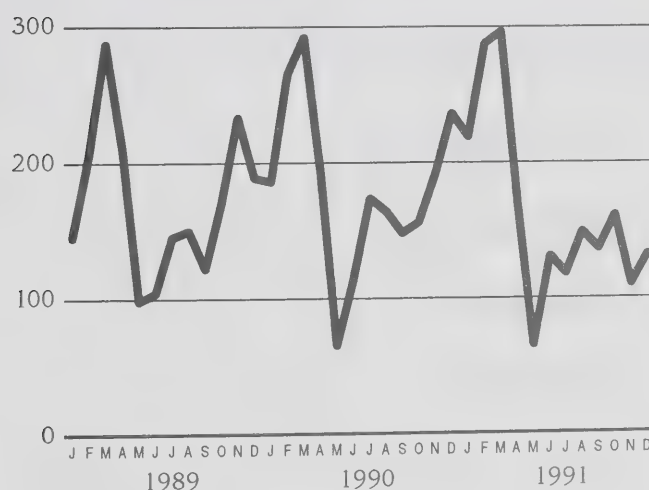


Figure 17
Geophysical Activity
 (Average Number of Crews Active per Month)

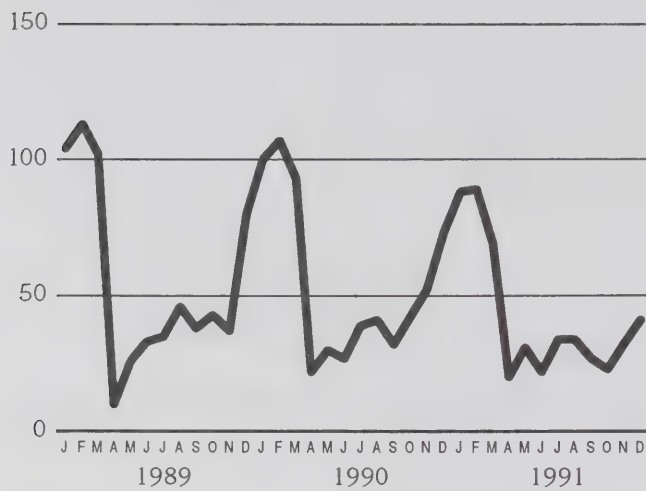
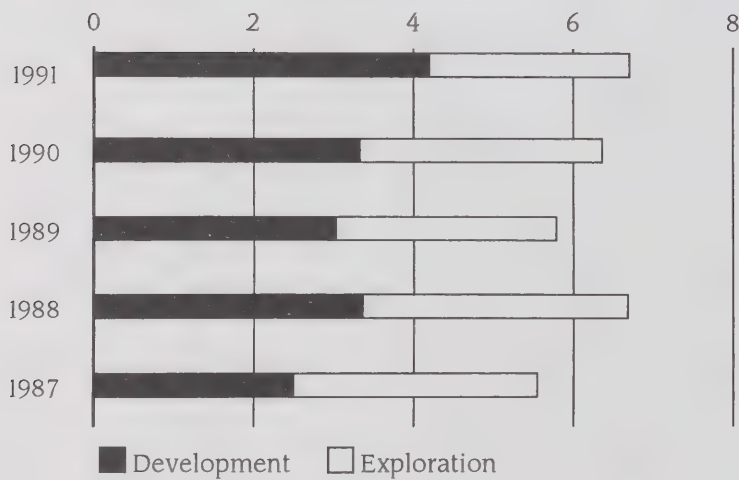


Figure 18
Exploration and Development Expenditures
 (Billions of Dollars)



Geophysical activity in 1991 was lower than the 1990 level in almost every month, both in terms of the average number of active crews per month and the number of kilometres of seismic shot per month. The average number of active crews per month for the last three years is illustrated in Figure 17. Geophysical activity traditionally increases during the winter months.

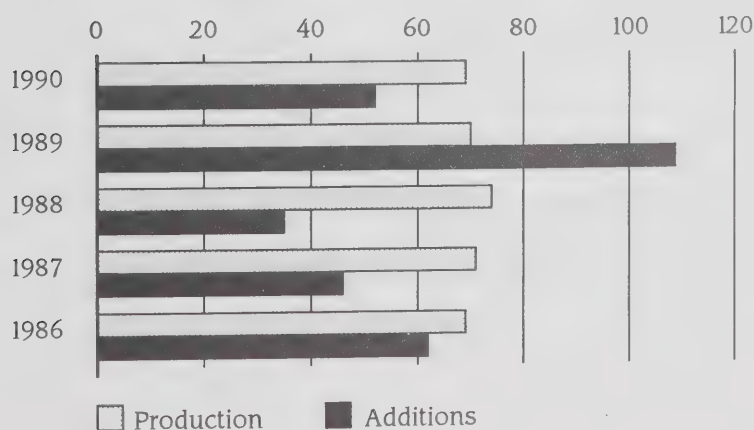
Exploration and development expenditures in Canada during 1991 were approximately \$6.7 billion (Figure 18). This represents an increase of approximately six percent from the \$6.3 billion spent in 1990 and is comparable on a nominal basis with the average annual expenditures over the past five years in conventional areas. During 1991, additional capital expenditures of approximately \$1.1 billion were made for the development of major projects, including Hibernia, Cohasset, Panuke, Caroline and the Lloydminster heavy oil upgrader.

Oil and Gas Reserves

The Board's estimates of initial (i.e., before production) established reserves of conventional crude oil increased 52.1 million cubic metres from the estimate for year-end 1989, due to new discoveries, extensions to existing pools and revisions to estimates of reserves in existing pools. A significant part of the new discoveries can be attributed to development in the Provost and Grand Forks areas in Alberta. The application of horizontal drilling increased the reserves by nearly nine million cubic metres. Most of the increase occurred in Saskatchewan.

The Board's estimate of remaining reserves of conventional crude oil, as of 31 December 1990, is 688.3 million cubic metres (1991 reserves data will be available toward the end of 1992). This, compared with the estimate at year-end 1989, shows a decrease of about two percent or 16.3 million cubic metres. Figure 19 illustrates the trend of conventional crude oil reserves additions relative to production over the past five years.

Figure 19
**Conventional Crude Oil
Reserves Additions and Production**
(Millions of Cubic Metres)



Since 1985, annual additions of conventional crude oil have generally not replaced production and have been progressively declining, except for 1989 when the discovered crude oil resources in the Hibernia field were booked as established reserves in view of the announced development plan.

The estimates of the initial and remaining established reserves for crude bitumen contained in Table 3 are for developed projects only, and are based on estimates provided in the Alberta Energy Resources Conservation Board's annual reserve report.

Table 3
**Estimated Established Reserves
of Crude Oil at 31 December 1990**
(Millions of Cubic Metres)

Conventional Crude Oil	Initial	Remaining
British Columbia	90.1	17.4
Alberta	2 182.1	438.1
Saskatchewan	501.0	118.4
Manitoba	35.7	7.8
Ontario	11.6	1.5
Northwest Territories & Yukon(a)		
Mackenzie Delta and Beaufort Sea	0.0	0.0
Arctic Islands and Eastern Arctic Offshore	1.0	0.8
Mainland Territories	35.2	21.3
Nova Scotia(b)	3.0	3.0
Newfoundland(c)	80.0	80.0
Total Conventional Crude Oil	2 939.7	688.3
Crude Bitumen(d)		
Surface-mineable	644.0	467.0
In Situ	102.9	57.4
Total Crude Bitumen	746.9	524.4
Total (Conventional Oil & Bitumen)	686.61	212.7

(a) For the purpose of this table, the Northwest Territories and Yukon Territory are divided into three geographic regions. The reserves for the Arctic Islands and Eastern Arctic Offshore region are composed totally of the Bent Horn Field. The reserves for the Mainland Territories region are composed totally of the Norman Wells Field.

(b) The reserves for Nova Scotia are composed totally of the Cohasset and Panuke Fields.

(c) The reserves for Newfoundland are composed totally of the Hibernia Field.

(d) Source: Alberta Energy Resources Conservation Board, Report ST90-18 (based on developed projects only).

During 1990, the Board's estimate of initial established reserves of marketable natural gas increased by 136 billion cubic metres, or about three percent, compared with the estimate at year-end 1989. Two-thirds of this increase, 86 billion cubic metres, occurred in Alberta.

As shown in Table 4, the Board's estimate of remaining established reserves of marketable natural gas, as of 31 December 1990, is 2 262 billion cubic metres (1991 reserves data will be available toward the end of 1992). This estimate is 28 billion cubic metres higher than the estimate for year-end 1989 as reserves additions more than offset production during the year.

Table 4
**Estimated Established Reserves
of Marketable Natural Gas
at 31 December 1990**
(Billions of Cubic Metres)

	Initial	Remaining
British Columbia	453	229
Alberta	3 262	1 623
Saskatchewan	141	84
Ontario	40	9
Northwest Territories & Yukon ^(a)		
Mackenzie Delta & Beaufort Sea	309	309
Arctic Islands & Eastern Arctic Offshore	0	0
Mainland Territories	15	8
TOTAL	4 220	2 262
(Total in exajoules)	162.4	87.1

NOTE: The numbers on this table have been rounded.

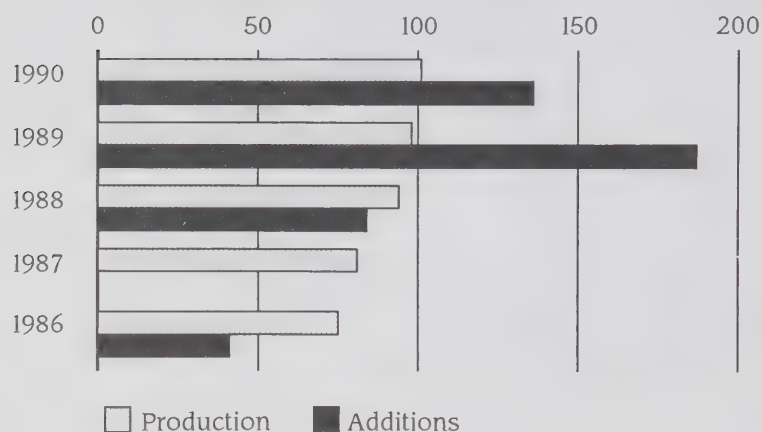
(a) For the purpose of this table, the Northwest Territories and Yukon Territory are divided into three geographic regions.

Alberta's remaining reserves decreased slightly. Saskatchewan and British Columbia recorded increases of about 17 percent and seven percent respectively. As shown in Figure 20, the increases in gas-directed drilling during 1989 and 1990 not only resulted in the discovery of a large number of small pools but also in significant extensions to existing pools. The substantial number of natural gas export applications recently considered by the Board necessitated a review of estimates of reserves for both new and existing pools. These revised estimates have been incorporated in the Board's estimate of established reserves.

Figure 20

Marketable Natural Gas Reserves Additions and Production*

(Billions of Cubic Metres)



*Starting in 1989, the data includes reserve additions and revisions for both the conventional producing areas and the frontier regions; however, the frontier regions contributed zero reserve additions in 1989. Data for 1986 to 1988 includes only the conventional producing areas.

Appendices

Energy Overview

1. Canadian Energy Consumption
2. Crude Oil and Equivalent Supply and Disposition
3. Natural Gas Supply and Disposition
4. Electricity Generation and Disposition

Oil

5. Exports of Petroleum Products – 1991
6. Exports of Canadian Crude Oil and Equivalent – 1990 and 1991
7. Exports of Canadian Crude Oil and Equivalent

Gas

8. Exports of Natural Gas
9. Imports of Natural Gas

Natural Gas Liquids

10. Exports of Propane, Butanes, Ethane and Ethylene Under Licences and Orders
11. Imports of Propane, Butanes, Ethane and Ethylene Under Licences and Orders
12. Total Net Exports of Propane and Butanes

Electricity

13. Exports 1991
14. Electricity Trade Between Canada and the United States (By Province)
15. Electricity Trade Between the United States and Canada (By American Region/State)

1. Canadian Energy Consumption^(a) (Petajoules)

	1987	1988	1989	1990	1991(e)
Petroleum (b)	3218.2	3369.5	3528.3	3407.0	3208.0
Natural Gas (c)	2159.2	2372.3	2526.6	2443.5	2439.0
Hydroelectricity (d)	1130.5	1096.4	1035.5	1054.2	1095.5
Nuclear (d) (f)	905.3	958.9	937.7	832.9	969.5
Coal	1117.7	1200.3	1197.8	1077.2	1035.4
Renewable and Other	554.2	553.5	543.2	541.1	537.5
TOTAL FOR CANADA	9085.1	9550.9	9769.1	9355.9	9285.0

a - Includes non-energy use, own use, and conversions and includes fuel for electricity exports.

b - Includes LPGs.

c - Excludes reprocessing shrinkage and includes ethane, reprocessing fuel and fuel used for bitumen production.

d - Hydro and nuclear are converted at 3.6 PJ/TW.h. and 12.1 PJ/TW.h. respectively.

e - Estimate.

f - Includes energy used to produce steam.

If the energy were converted using a heat content of 10.5 petajoules per terawatt hour, a conversion factor which estimates the amount of primary energy associated with hydro and nuclear electricity based on the amount which would be required if fossil fuels were used, the amount would be:

	1987	1988	1989	1990	1991(e)
Hydroelectricity and Nuclear	4082.9	4029.9	3833.8	3797.6	4036.6

2. Crude Oil and Equivalent Supply and Disposition
(Thousands of Cubic Metres per Day)

	1987	1988	1989	1990	1991
Supply					
Canadian Production (a)	259.6	272.6	264.2	263.4	263.3
Imports (b)	64.7	71.7	77.3	86.2	92.0
Total Supply (d)	324.3	344.3	341.5	349.6	355.3
Disposition					
Domestic (b)	226.5	238.3	249.2	256.6	247.6
Exports (c)	99.6	112.8	102.9	104.2	121.9
Total Disposition (d)	326.1	351.1	352.1	360.8	369.5

a- Source:NEB

b- Source:EMR Form 153 - Refinery Receipts.

c- Source:NEB Form 306 - Crude Oil Exports.

d- Total supply does not equal total disposition due to inventory changes, etc.

Energy Overview

3. Natural Gas Supply and Disposition (Billions of Cubic Metres at 101.325 KPa and 15 Celsius)

	1987	1988	1989	1990	1991(e)
Net Sales in Canada	47.8	52.7	56.9	54.5	54.7
Other Uses in Canada (a)	2.1	2.9	2.8	4.5	3.4
Imports	-0.1	-0.6	-1.2	-0.7	-0.5
Exports	28.0	35.9	37.9	40.7	47.8
Total Deliveries of Canadian Gas (b)	77.8	90.9	96.4	99.0	105.4
Marketable Gas Production (b)	80.9	93.9	98.1	101.0	108.8

a - Includes pipeline fuel and losses and other deliveries, less inventory changes.

b - Total deliveries includes synthetic natural gas but excludes reprocessing shrinkage and reprocessing fuel which are included in marketable gas production.

e - Estimate.

4. Electricity Generation and Disposition (Terawatt Hours)

	1987	1988	1989	1990	1991 (p)
Total Generation	483.2	490.6	482.7	467.6	489.0 (p)
Imports (a)	0.5	2.8	8.7	15.4	1.9 (p)
Total Supply	483.7	493.4	491.4	483.0	490.9
Demand	438.3	463.7	472.9	466.7	471.1
Exports (a)	45.4	29.7	18.5	16.3	19.8

a - Excludes exchanges between Canada and the United States.

p - Preliminary.

5. Exports of Petroleum Products - 1991 (Cubic Metres)

Month	Motor Gasoline	Middle Distillate	Heavy Fuel Oil	Aviation Turbine Fuel	Partially Processed Oil	Total(a)
January	445 776	447 501	123 766	73 085	42 895	1 133 023
February	230 432	424 568	173 805	19 487	0	848 292
March	532 455	558 812	216 259	93 958	41 777	1 443 261
April	399 923	503 970	208 897	44 496	40 215	1 197 501
May	493 856	415 604	187 502	35 337	11 200	1 143 499
June	342 028	360 588	168 242	27 270	0	898 128
July	274 428	326 396	198 711	28 208	37 280	865 023
August	352 143	521 120	239 454	38 845	45 115	1 196 677
September	377 965	505 303	189 013	54 060	0	1 126 341
October	218 708	283 082	164 780	26 803	20 170	713 543
November	323 850	457 704	151 202	31 037	0	963 793
December	255 378	467 448	257 449	34 067	0	1 014 342
Total(m³/d)	4 246 942	5 272 096	2 279 080	506 653	238 652	12 543 423

a) Excludes propane, butane, lubricants, greases, asphalt, petrochemicals, etc.

6. Exports of Canadian Crude Oil and Equivalent - 1990 and 1991
(Cubic Metres)

Exporter	1990		1991	
	Total Daily Average		Total Daily Average	
Amoco Production Company	4 493 880	12 312	6 884 630	18 862
Ashland Oil Inc.	1 734 845	4 753	1 679 000	4 600
BP Oil	293 095	803	1 047 185	2 869
Cenex	1 117 995	3 063	1 085 875	2 975
Chinese Petroleum Corporation	39 713	109	70 445	193
Clark Oil & Refining Corporation	2 308 990	6 326	3 209 445	8 793
Conoco Inc.	2 409 365	6 601	2 496 235	6 839
Crystal Refining	45 990	126	32 390	86
Exxon Company, U.S.A.	1 243 555	3 407	1 516 940	4 156
Frontier Oil and Refining Co.	-	-	39 785	109
Koch Refining Company	9 244 720	25 328	9 133 030	25 022
Laketon Refining Corp.	351 130	962	374 125	1 025
MG Refining & Marketing	-	-	33 580	92
Marathon Petroleum Company	715 765	1 961	757 740	2 076
Marubeni Corporation	-	-	70 080	192
Mobil Oil Corporation	5 176 065	14 181	6 074 695	16 643
Montana Refining Company	271 560	744	281 415	771
Murphy Oil U.S.A. Inc.	993 165	2 721	1 039 520	2 848
Pecten Trading Company	29 565	81	-	-
Shell Oil Company	255 865	701	114 610	314
Sinclair Oil Corporation	-	-	357 335	979
Sun Refining and Marketing Co.	2 552 810	6 994	2 981 320	8 168
Texaco U.S.A.	29 565	81	196 735	539
Total Petroleum, Inc.	23 695	643	387 265	1 061
Union Oil Company of California	1 095	3	151 110	414
United Refining Company	3 159 805	8 657	3 107 975	8 515
Uno-Ven Company	1 059 230	2 902	1 172 745	3 212
U.S. Oil & Refining Co.	267 910	734	191 990	526
Total	37 819 373	104 193	44 487 200	121 879

7. Exports of Canadian Crude Oil and Equivalent
(Cubic metres per day)

	1987	1988	1989	1990	1991
Light Crude and Equivalent	44 213	50 214	47 136	44 814	62 335
Heavy Crude Oil	55 357	62 565	55 734	59 379	59 544
Total	99 570	112 778	102 870	104 193	121 879

8. Exports of Natural Gas (Millions of Cubic Metres)

Exporter	Licence or Order Number	1990 Actual	1991 Preliminary	Cumulative to December 31 1991
AEC Oil and Gas Company	GO-98-89	2.6	0.0	2.7
Alberta and Southern Gas Co. Ltd.	GL-99	10 848.9	9 578.8	52 967.0
	GO-132-90	12.1	24.5	36.6
	GO-101-91	0.0	13.3	13.3
Alberta Northeast Gas & AEC	GL-105	0.0	0.9	0.9
Alberta Northeast Gas & Atcor	GL-104	0.0	1.6	1.6
Alberta Northeast Gas & ProGas	GL-103	0.0	3.5	3.5
Alberta Northeast Gas & TCPL	GL-102	0.0	47.4	47.4
Altana Exploration & Roan Resources Ltd.	GO-30-91	0.0	14.2	14.2
Amerada Hess Canada	GO-68-91	0.0	3.9	3.9
Amoco Canada Petroleum Company Ltd.	GL-112	167.8	174.4	370.2
	GO-80-88	1.6	0.0	173.7
	GO-122-89	0.0	0.0	1.4
	GO-124-89	7.6	0.0	33.1
	GO-1-90	107.9	0.0	107.9
	GO-78-90	0.2	20.6	20.9
	GO-79-90	24.5	125.1	149.6
	GO-80-90	1.0	0.0	1.0
	GO-11-91	0.0	192.4	192.4
Amoco Canada Resources Limited	GL-108	129.2	6.6	185.0
	GO-94-88	0.0	0.0	125.1
	GO-16-89	21.6	22.4	125.1
Amoco Canada Res. / Consolidated Edison Co.	GL-127	0.0	166.5	166.5
Atcor Ltd.	GO-51-90	12.6	58.7	71.3
B.C. Gas Inc.	GL-123(a)	50.6	50.2	100.7
Bonus Gas Processors Corp.	GO-88-88	6.0	0.0	19.3
	GO-63-90	4.6	34.5	39.1
	GO-51-91	0.0	7.1	7.1
BP Resources Canada Limited	GO-24-89	63.3	11.7	87.0
	GO-42-90	7.3	109.0	116.3
British Columbia Petroleum Corporation	GO-104-89	365.6	0.0	489.6
	GO-123-89	405.8	0.0	687.3
Brymore Gas (Canada) Inc.	GO-88-89	22.3	85.0	116.6
	GO-15-90	237.8	36.0	273.8
	GO-99-90	0.0	16.2	16.2

8. Exports of Natural Gas (Millions of Cubic Metres) (cont'd)

Exporter	Licence or Order Number	1990 Actual	1991 Preliminary	Cumulative to December 31 1991
Brymore Gas (Canada) Inc. (cont'd)	GO-141-90(b)	0.0	33.3	33.3
	GO-58-91 (13,2 in-tr)	0.0	91.1	91.1
Canadian Hunter Marketing Ltd.	GO-58-90	19.9	0.0	19.9
	GO-81-90	68.4	254.7	323.1
	GO-48-91	0.0	274.7	274.7
Canadian Hydrocarbons Limited	GO-9-89	23.7	0.0	293.2
	GO-12-90	271.1	28.7	299.9
	GO-87-90	7.2	28.0	35.2
	GO-3-91	0.0	266.3	266.3
	GO-79-91	0.0	90.5	90.5
Canadian Natural Resources Ltd.	GO-67-91	0.0	0.2	0.2
Canadian Occidental Petroleum Limited	GO-18-88	21.9	0.0	158.4
	GO-37-90	64.8	123.1	187.9
	GO-97-91	0.0	46.5	46.5
Canadian-Montana Pipe Line Company	GL-25	0.0	0.0	3 516.3
	GL-72	240.2	251.4	988.0
	GO-3-79	4.4	4.5	41.5
CanStates Gas Marketing	GO-54-90	9.8	104.8	114.6
	GO-146-90	3.7	222.7	226.5
	GO-75-91	0.0	38.0	38.0
CanStates Gas Marketing/Transco Marketing	GO-95-91	0.0	42.5	42.5
Canterra Energy Ltd.	GL-113	130.2	116.3	283.8
	GL-114	93.4	105.3	198.7
	GO-14-88	14.0	0.0	84.6
	GO-70-89	27.5	41.8	71.3
	GO-14-90	77.1	105.6	182.6
Canwest-Gas Supply Inc.	GO-52-90	695.5	1 812.2	2 507.8
	GO-24-91	0.0	457.1	457.1
Centra Gas Ontario Inc.	GL-130(c)	0.8	142.6	143.4
Centra Transmission Holdings Inc.	GL-28	0.0	0.0	129.7
	GL-29	0.0	0.0	2 690.3
	GL-30(c)	234.2	246.6	5 292.5
	GO-113-89	7.8	0.0	11.2
	GO-115-89	91.8	0.0	115.4
	GO-70-90	2.9	8.0	10.9
	GO-71-90	39.0	157.2	196.2
Cherhill Resources Limited	GO-22-88	0.0	0.0	27.7
Chevron Canada Resources Limited	GO-116-90	0.0	0.2	0.2

8. Exports of Natural Gas (Millions of Cubic Metres) (cont'd)

Exporter	Licence or Order Number	1990 Actual	1991 Preliminary	Cumulative to December 31 1991
Chevron Canada Resources Limited (cont'd)	GO-117-90	0.2	5.4	5.5
Coastal Gas Marketing Company	GOL-1(d)	0.0	7.7	7.7
	GO-38-91	0.0	42.9	42.9
Continental Energy Marketing Ltd.	GO-118-90	0.0	18.3	18.3
	GO-39-91	0.0	83.3	83.3
Czar Resources Limited	GO-28-88	0.0	0.0	175.6
	GO-41-90	3.4	71.0	74.4
Dekalb Petroleum Corporation	GO-57-89	142.7	67.3	258.2
	GO-34-91	0.0	91.1	91.1
Direct Energy Marketing Limited	GO-107-90	0.1	12.6	12.8
	GO-22-91	0.0	11.0	11.0
	GO-53-91	0.0	10.4	10.4
Encor Energy Corporation Inc.	GO-42-91	0.0	2.4	2.4
Energy Marketing Exchange	GO-92-91	0.0	29.4	29.4
Enron Gas Marketing	GO-126-90	10.8	105.0	115.8
Esso Resources Canada Limited	GO-74-89	8.5	0.0	8.5
	GO-34-90	0.1	0.0	0.1
Esso Resources Canada Ltd. and Transco Energy Marketing Company	GL-82	15.0	0.0	1 825.5
	GL-136	108.5	65.5	174.0
	GO-117-89	502.3	0.0	566.5
	GO-17-91	0.0	384.0	384.0
	GO-63-91	0.0	324.9	324.9
Fulton Cogeneration Associates	GO-40-91	0.0	67.9	67.9
Grand Valley Gas Company	GO-112-89	33.4	0.0	37.7
	GO-142-89	4.8	0.0	6.8
	GO-35-90	40.9	0.0	40.9
	GO-103-90	22.0	177.9	199.9
	GO-104-90	70.4	190.3	260.8
	GO-86-91	0.0	223.9	223.9
Husky Oil Operations Ltd.	GO-153-89	2.9	1.8	4.7
	GO-33-91	0.0	5.2	5.2
Imperial Oil Limited	GO-91-88(e)	31.9	0.0	132.4
Indeck Gas Supply Corporation	GL-133	6.5	151.4	157.9
	GO-133-90	0.0	31.1	31.1
	GO-27-91	0.0	57.5	57.5

8. Exports of Natural Gas (Millions of Cubic Metres) (cont'd)

Exporter	Licence or Order Number	1990 Actual	1991 Preliminary	Cumulative to December 31 1991
Jonan Resource Management	GO-46-91	0.0	13.1	13.1
Kamine Carthage Cogen Co. Inc.	GO-80-91	0.0	4.9	4.9
Kamine South Glens Falls Cogen Co. Inc.	GL-159	0.0	14.3	14.3
KannGaz Producers Ltd.	GL-77	241.0	258.5	672.1
	GO-34-89	0.0	0.0	7.8
	GO-75-89	51.9	0.0	63.3
	GO-45-90	125.7	502.9	628.6
Kerr-McGee Canada Ltd.	GO-37-89	0.9	0.0	1.7
	GO-61-91	0.0	3.7	3.7
Many Islands Natural Gas (Canada) Limited	GL-44(f)	436.0	463.6	7 875.8
Mobil Oil Canada	GL-145	0.0	50.1	50.1
	GL-146	0.0	18.1	18.1
	GL-147	0.0	29.4	29.4
	GO-109-89	2.1	0.0	2.1
	GO-129-89	773.6	1 000.3	1 773.9
	GO-139-89	0.0	0.0	2.0
	GO-145-89	124.8	174.2	299.0
	GO-49-90	7.3	0.0	7.3
	GO-50-90	5.4	35.5	40.9
	GO-75-90	2.8	8.0	10.8
	GO-89-91	0.0	1.1	1.1
Natgas Canada Inc.	GO-30-90	27.4	0.0	27.4
Niagara Gas Transmission Limited	GL-78	226.9	182.5	927.7
	GO-16-90	3.0	38.9	41.9
Norcen Energy Resources Limited	GL-115	133.6	123.5	296.4
	GL-116	44.5	54.4	98.9
	GO-51-89	0.0	0.0	4.3
North Canadian Oils Limited	GL-142	0.0	25.1	25.1
	GL-143	0.0	17.3	17.3
	GO-65-88	159.5	0.0	225.0
	GO-69-89	177.1	137.4	330.6
	GO-61-90	140.7	327.2	467.9
	GO-55-91	0.0	149.2	149.2
Northcan Energy Inc.	GO-30-88	0.0	0.0	24.9
	GO-3-89	34.7	0.0	414.5
Northern Minnesota Utilities	GO-3-91(g)	0.0	39.4	39.4
	GO-88-91	0.0	38.2	38.2
Northern Minnesota Utilities/Warroad	GO-66-91	0.0	1.0	1.0

8. Exports of Natural Gas (Millions of Cubic Metres) (cont'd)

Exporter	Licence or Order Number	1990 Actual	1991 Preliminary	Cumulative to December 31 1991
Northridge Petroleum Marketing, Inc.	GO-79-89(h)	172.6	0.0	185.8
	GO-80-89	4.1	0.0	4.3
	GO-72-90	2.1	8.2	10.3
	GO-1-91(i)	0.0	155.1	155.1
	GO-15-91	0.0	102.7	102.7
Northwest Pacific Energy Marketing Inc.	GO-115-88	115.2	0.0	229.1
	GO-122-90	0.0	187.2	187.2
Pan-Alberta Gas Ltd.	GL-97	7 265.7	7 268.2	28 204.4
	GL-106	2 478.6	2 224.5	7 598.2
	GO-8-88	1.6	0.0	370.7
	GO-67-89	65.4	35.7	2 230.5
	GO-21-90	0.4	0.0	0.4
	GO-13-91	0.0	372.5	372.5
Petro-Canada Inc.	GO-25-89	228.1	0.0	415.2
	GO-105-90	65.8	310.0	375.8
	GO-76-91	0.0	3.1	3.1
	GO-93-91	0.0	63.0	63.0
Placer Cego Petroleum Ltd.	GO-15-88	7.5	0.0	100.8
	GO-15-89	0.0	0.0	9.8
	GO-36-90	50.7	0.0	50.7
Poco Petroleums Ltd.	GL-117	78.3	116.1	194.4
	GL-118	76.3	94.4	170.7
	GO-72-87	8.0	0.0	57.4
	GO-110-88	511.4	0.0	1 131.9
	GO-53-89	100.3	22.9	144.8
	GO-54-89	0.1	0.0	0.1
	GO-13-90	48.7	472.1	520.8
	GO-123-90	68.8	568.8	637.7
ProGas Limited	GO-44-91	0.0	33.5	33.5
	GL-98	1 331.0	1 040.7	6 430.9
	GL-101	76.5	474.4	550.9
	GL-109	0.0	43.2	43.2
	GL-129	0.0	105.3	105.3
	GO-118-89	752.4	322.7	1 122.6
	GO-127-89	2.3	32.4	38.4
	GO-24-90	160.7	137.8	298.5
Ramaro Resources Inc.	GO-57-91	0.0	362.9	362.9
	GL-139	0.0	10.2	10.2
Renaissance Energy Ltd.	GO-9-91	0.0	2.1	2.1
Sceptre Resources Limited	GO-81-89	1.2	0.0	1.3
	GO-69-91	0.0	5.5	5.5

8. Exports of Natural Gas (Millions of Cubic Metres) (cont'd)

Exporter	Licence or Order Number	1990 Actual	1991 Preliminary	Cumulative to December 31 1991
Shell Canada Limited	GL-100	223.4	236.1	724.0
	GL-119	120.3	119.3	284.5
	GL-120	88.0	111.5	199.6
	GL-134	0.0	24.1	24.1
	GO-16-88	16.8	0.0	40.0
	GO-25-88	66.6	0.0	487.4
	GO-63-89	0.0	0.0	2.9
	GO-9-90	17.0	7.0	24.0
	GO-28-90	334.6	363.1	697.7
	GO-39-90	44.4	62.1	106.5
	GO-12-91	0.0	104.8	104.8
Suncor Inc.	GO-29-89	365.9	66.4	633.0
	GO-39-89	5.7	2.4	8.2
	GO-55-90	1.1	0.0	1.1
	GO-26-91	0.0	248.1	248.1
Tarpon Gas Marketing Ltd.	GO-2-88	3.6	0.0	4.7
	GO-10-90	235.9	12.5	248.4
	GO-73-90	0.0	8.1	8.1
	GO-142-90	0.0	15.9	15.9
	GO-36-91	0.0	144.7	144.7
TransCanada PipeLines Limited	GL-20	0.0	0.0	14 384.7
	GL-21(j)	7 007.8	6 107.3	137 342.2
	GL-37	131.9	0.0	29 320.7
	GL-38	0.0	0.0	6 770.7
	GL-39	0.0	0.0	915.0
	GL-42(j)	2 257.7	1 334.6	43 662.4
	GL-43	445.0	208.7	2 431.0
	GL-83	842.2	673.1	4 615.5
	GL-84	77.5	51.7	184.2
	GL-86	0.0	39.8	40.7
	GL-87	0.0	39.8	40.7
	GL-89	0.0	0.0	604.0
	GL-110	0.0	43.2	43.2
	GL-121	120.4	116.3	281.4
	GL-122	83.9	112.3	196.2
	GO-23-88	0.0	0.0	138.0
	GO-11-89 (3.5 in. line)	240.2	9.4	411.7
	GO-14-89	14.7	0.0	26.1
	GO-50-89	3 531.8	1 517.9	7 805.0
	GO-83-89	13.5	6.0	19.5
	GO-108-89	187.7	158.5	392.3
	GO-147-89	213.3	571.4	785.6
	GO-12-91(k)	0.0	2 089.0	2 089.0
	GO-37-91	0.0	1 624.5	1 624.5
Unigas Corporation	GO-19-89	333.9	6.4	407.1
	GO-93-89	710.5	790.6	1 672.9
	GO-112-90	1.1	57.6	58.7

8. Exports of Natural Gas (Millions of Cubic Metres) (cont'd)

Exporter	Licence or Order Number	1990 Actual	1991 Preliminary	Cumulative to December 31 1991
Unigas Corporation (cont'd)	GO-148-90	0.0	10.4	10.4
	GO-14-91	0.0	193.1	193.1
Unocal Canada Limited	GO-75-88	0.0	0.0	6.1
	GO-152-89	27.4	0.0	27.4
	GO-144-90	0.0	2.4	2.4
Vancouver Island Gas Joint Venture (JV)	GO-90-91	0.0	15.9	15.9
Vector Energy Inc.	GO-78-89	82.4	295.2	377.6
	GO-77-91	0.0	33.7	33.7
Wainoco Oil Corporation	GO-120-89	86.3	0.0	104.5
	GO-108-90	5.4	45.3	50.7
	GO-91-91	0.0	10.5	10.5
Wes Cana Energy Marketing Inc.	GO-6-91	0.0	0.0	0.0
	GO-54-91	0.0	11.8	11.8
Westcoast Energy Marketing Ltd.	GL-131	309.8	326.7	636.5
	GO-44-89	27.1	0.0	64.5
	GO-116-89	399.4	0.0	565.9
Western Gas Marketing Limited	GL-128	0.0	26.6	26.6
	GL-141	0.0	25.9	25.9
	GO-63-88	0.0	0.0	28.4
	GO-151-89	0.3	0.0	0.4
	GO-66-90 13.5 (l)in-	133.4	2 755.4	2 888.8
	GO-95-90	17.5	199.3	216.8
	GO-120-90 (m)13.5	13.5	0.0	13.5
	GO-16-91	0.0	961.9	961.9
Western Gas Services Ltd.	GO-104-91	0.0	113.0	113.0
GROSS EXPORTS		50 886.5	58 535.9	415 546.9
NET EXPORTS(n)		40 689.3	47 849.9	218 464.5

a - This order authorizes an export of natural gas for storage in the U.S. and for subsequent import.

b - This licence authorizes an export of natural gas which the licensee has imported near Sarnia, Ont.

c - This licence authorizes an export of natural gas near Sprague, Man. for import near Rainy River, Ontario.

d - This order authorizes an export of natural gas at Niagara Falls, Ont. which the licensee has previously imported at Sarnia, Ont.

e - This order authorizes an export of natural gas near Emerson, Man. for an import of ethane by Dome Petroleum Limited and Amoco Petroleum Company Ltd. near Sarnia, Ont.

f - This licence authorizes an export of natural gas which the licensee has imported near Willow Creek, Sask. pursuant to licence GLI-5.

g - This order authorizes an export of natural gas near Sprague, Man. for subsequent import near Rainy River, Ont.

h - This order authorizes an export of natural gas for subsequent import on order GO-92-89.

i - This order authorizes exportation of natural gas near Emerson, Man. for subsequent import under order GO-106-90 and GO-29-91 near St. Clair, Ont.

j - This order authorizes an export of natural gas near Emerson, Man. for import near Sault Ste Marie and Sarnia, Ont. to serve eastern Canadian markets.

k - This order authorizes an export of natural gas near Emerson, Man. for subsequent import near Sault Ste Marie or Sarnia, Ont.

l - Export only

m - Import only

n - Excludes volumes of licences/orders under footnotes.

9. Imports of Natural Gas (Millions of Cubic Metres)

Importer	Licence or Order Number	1990	1991	Cumulative to 31 December 1991
Access Energy Corporation	GO-102-89	12.7	.0	16.2
Atcor Ltd.	GO-89-89	.0	.0	14.9
B.C. Gas Inc	GL-123(a)	45.4	33.4	78.8
Brymore Gas (Canada) Inc.	GO-135-90	.0	3.2	3.2
	GO-141-90(b)	.0	46.5	46.5
Canadian Western Natural Gas Company Limited	GO-117-88	.5	.0	1.3
	GO-87-89	.2	.0	.7
	GO-60-90	1.4	.9	2.3
	GO-65-91	.0	.3	.3
Centra Gas Manitoba Inc.	GO-113-90	23.8	31.5	55.3
	GO-18-91	.0	10.0	10.0
Centra Gas Ontario Inc.	GL-130(c)	.8	142.6	143.4
	GO-103-89	11.9	.0	54.7
	GO-146-89	13.7	.0	13.7
	GO-138-90	.0	22.5	22.5
Centra Transmission Holdings Inc.	GL-30(c)	234.2	246.6	5 292.5
Cibola (Canada) Energy Marketing Inc.	GO-73-91	.0	5.7	5.7
Coastal Gas Marketing Company	GOL-1(d)	.0	7.7	7.7
Continental Energy Marketing Ltd.	GO-45-91	.0	.4	.4
Gaz Métropolitain, Inc	GO-29-90	22.8	.0	31.3
	GO-48-90	41.9	14.7	56.7
	GO-67-90	.0	37.0	37.0
	GO-69-90	.3	.0	.3
Many Islands Natural Gas (Canada) Limited	GLI-5(e)	425.9	452.4	7 959.4
Natural Gas Clearinghouse	GO-26-90	27.4	.0	27.4
Northern Minnesota Utilities (WGML)	GOL-3-91(f)	.0	38.2	38.2
Northridge Petroleum Marketing Inc.	GO-92-89(g)	46.8	.0	59.9
	GO-141-89(h)	52.0	.0	52.0
	GO-40-90(g)	17.4	.0	17.4
	GO-106-90(h)	25.8	19.9	45.7
	GO-29-91(h)	.0	121.7	121.7
St. Clair Pipelines Ltd.	GO-47-89	.0	.0	58.9
	GO-111-89	14.9	.0	35.3
Tarpon Gas Marketing	GO-94-89	34.3	.0	52.8
	GO-68-90	4.2	.0	4.2

9. Imports of Natural Gas (Millions of Cubic Metres) (cont'd)

Importer	Licence or Order Number	1990	1991	Cumulative to 31 December 1991
The Consumers' Gas Company	GO-97-89	30.9	.0	76.0
	GO-143-89	57.7	.0	57.7
	GO-76-90	.0	40.4	40.4
	GO-105-91	.0	.3	.3
TransCanada PipeLines Limited	GL-21(i)	7 420.8	5 638.0	137 227.1
	GL-42(i)	1 598.3	1 334.6	43 075.5
	GOL-2-91(j)	.0	2 089.0	2 089.0
Unigas Corporation	GO-121-89	39.4	.0	42.5
	GO-47-90	.0	18.4	18.4
	GO-85-90	.0	5.4	5.4
Union Gas Limited	GO-61-89	.0	.0	60.0
	GO-62-89	22.9	.0	24.0
	GO-136-89	55.4	.0	60.0
	GO-137-89	60.0	.0	60.0
	GO-138-89	28.9	.0	28.9
	GO-136-90	.0	.0	.0
	GO-137-90	10.5	120.0	130.4
	GO-78-91	.0	66.8	66.8
Western Gas Marketing Limited	GO-90-89	23.6	.0	36.1
	GO-149-89	60.1	.0	60.1
	GO-64-90	2.1	29.0	31.2
	GO-97-90	.0	.8	.8
	GO-98-90	.0	107.9	107.9
Western Gas Services Ltd.	GO-103-91	.0	32.3	32.3
GROSS IMPORTS		10 469.1	10 717.9	197 699.1
NET IMPORTS(k)		601.7	547.4	1 444.3

a - This licence authorizes an import of natural gas at Huntingdon, B.C. which the licensee has previously exported for storage in the U.S.

b - This order authorizes an import of natural gas near Sarnia for subsequent export to the U.S. near Niagara Falls, Ont.

c - This licence authorizes an import of natural gas which the licensee has previously exported near Sprague, Man.

d - This order authorizes an import of natural gas near Sarnia for subsequent export to the U.S. near Niagara Falls, Ont.

e - This licence authorizes an import of natural gas for subsequent export near Emerson, Man. pursuant to licence GL-44.

f - This order authorizes an import of natural gas near Rainy River, Ont. which the holder has previously exported near Sprague, Man.

g - This order authorizes an import of natural gas which was previously exported under order GO-79-89.

h - This order authorizes an import of natural gas at St. Clair, Ont. which the holder has previously exported.

i - This licence authorizes an import of natural gas which the licensee has previously exported near Emerson, Man. This natural gas serves eastern Canadian markets.

j - This order authorizes an import of natural gas near Sault Ste Marie, and Sarnia, Ont. which the holder has previously exported near Emerson, Man.

k - Excludes volumes of licences/orders under footnotes.

Natural Gas Liquids

10. Exports of Propane, Butanes, Ethane and Ethylene Under Licences and Orders (Cubic Metres)

Exporter	Licence or Order Number	1990	1991
PROPANE			
Amoco Canada Petroleum Company Limited	GL-32	92 698	92 698
Dome Petroleum Limited	GL-31	169 047	165 873
NET EXPORTS		261 745	258 571

ETHANE			
Dome Petroleum Limited	GO-43-89	801 184	307 287
Amoco Canada Resources Ltd.	GO-52-91	0	322 318
NET EXPORTS		801 184	629 605

ETHYLENE			
Dow Chemical of Canada Limited	EYL-2-76 (a)	0	0
NET EXPORTS		0	0

a- This licence/order authorizes an export of product for subsequent import

11. Imports of Propane, Butanes, Ethane and Ethylene Under Licences and Orders (Cubic Metres)

Importer	Licence or Order Number	1990	1991
ETHANE			
Dome Petroleum Limited	GO-43-89	755046	363616
	GO-134-89	62932	N/A
	GO-20-91	N/A	37234
Amoco Canada Petroleum Company Limited	GO-43-89	N/A	286980
	GO-20-91	N/A	79152
TOTAL IMPORTS		817978	766982

ETHYLENE			
Dow Chemical of Canada Limited	EYL-2-76	0	0

N/A Not Applicable

12. Total Net Exports of Propane and Butanes (Cubic Metres)

Exporter	Propane		Butanes	
	1990	1991	1990	1991
168211 Canada Limited	N/A	399 962	N/A	167 591
Amoco Canada Petroleum Company Ltd. (a)	1 730 171	1 803 947	1 169 177	1 150 336
Atlantic Speedy Propane Limited	6 531	5 619	N/A	N/A
Burnwell Gas of Canada Ltd.	44 322	46 900	N/A	N/A
Canadian Enterprise Gas Products Ltd.	18 367	18 671	25 210	19 340
CanPet Marketing Ltd.	17 249	38 832	3 075	27 106
CanStates Energy	115 449	43 144	206 585	64 028
Chevron Canada Resources	23 975	3 975	N/A	N/A
Commonwealth Petroleum Co.	26 317	26 391	N/A	N/A
Consumers' Co-Operative Refineries Ltd.	N/A	1 227	471	717
Desticon Gas Liquids Enterprises Ltd.	4 374	682	6 943	1 824
Dominion Propane Corp.	4 026	1 610	N/A	N/A
Dow Chemical Canada Inc.	N/A	7 970	N/A	N/A
Elbow River Resources Ltd.	2 274	1 956	12 301	40 753
Energy Transportation Inc.	10 568	14 468	17 236	26 024
Enron Liquids Marketing Canada Ltd.	14 008	20 494	5 976	5 287
Ferrellgas, Inc.	5 600	N/A	N/A	N/A
Gibson Gas Liquids Ltd.	478	6 939	22 304	27 630
Gulf Canada Resources Ltd.	170 528	136 024	101 387	36 017
Home Oil Company Limited	20 544	16 902	18 802	28 845
ICG Liquid Gas Ltd.	11 621	16 877	N/A	N/A
Imperial Oil Limited	312 370	N/A	234 842	N/A
Irving Oil Limited	120	N/A	N/A	N/A
Koch Hydrocarbons Canada	6 570	2 998	8 455	19 144
L.P.G. Resources Canada Inc.	120	N/A	N/A	N/A
M-P Oils Ltd.	79 718	76 278	1 444	1 371
Mobil Oil Canada	56 524	46 796	41 162	47 019
NGL Supply (1985) Ltd.	88 467	80 236	12 965	55 858
Norcal Gas Liquids Ltd.	5 818	6 901	576	2 836
Northridge Gas Liquids Marketing Inc.	N/A	794	N/A	19 334
PanCanadian Gas Products Ltd. (a)	131 822	140 713	93 759	117 242
Petro-Canada Hydrocarbons Inc.	464 548	424 452	303 594	273 041
Petrogas Marketing Ltd.	39 523	29 080	16 996	28 845
Petromont Inc.	40 799	47 406	N/A	470
Petrowest Petroleum Ltd.	31 130	22 470	12 048	4 351
Shell Canada Products Ltd.	194 620	202 047	222 609	191 933
Stittco Energy Ltd.	8 782	10 322	3 532	3 159
Suncor Inc.	N/A	16 386	4 856	14 650
Texaco Canada Inc.	9 658	N/A	4 787	N/A
Unocal Canada Ltd.	2 108	478	2 740	N/A
Vision Energy	3 478	11 289	N/A	2 100
TOTAL	3 702 577	3 731 237	2 553 833	2 376 850

a - Includes net export volumes under licences.

N/A Not Applicable

13. Exports 1991 (Megawatt Hours)

Exporter	Licence Number	Licence Authorization		Gross Energy Exported			Value of Export (\$)	
		Firm	Interruptible	Firm	Interruptible	Exchange(a)	Firm	Interruptible
NEW BRUNSWICK								
Fraser Inc.	EPE-7	400 000	--	326 580	--	--	18 350 921	--
Maine and New Brunswick Electrical Power Company, Limited	EL-177	200 000	--	104 128	--	--	2 724 752	--
New Brunswick Power	EL-137 *	876 000	--	75 061	--	- 661	3 941 408	--
	EL-138	876 000	--	710 250	--	- 6 268	39 872 462	--
	EL-139 *	92 000	--	5 036	--	- 275	312 475	--
	EL-140 *	--	6 482 400(b)	--	69 975	- 1 721	--	3 020 561
	EL-141 *	1 226 400	--	--	--	3 809	--	--
	EL-142 *	140 000	--	--	--	--	--	--
	EL-143 *	--	300 000	--	22 590	1 486	--	1 200 132
	EL-144 *	250 000	--	--	--	--	--	--
	EL-145 *	--	179 000	--	--	327	--	--
	EL-150	1 138 000	--	177 562	--	- 1 566	9 968 110	--
	ELO-228 *	250 000	--	--	--	--	--	--
	ELO-244 *	--	--	--	--	--	--	--
to	ELO-246 *	445	--	230	--	--	21 615	--
	EPE-03	10 000	--	--	--	1 656	--	--
	EPE-14	876 000	--	780 657	--	- 8 520	39 647 196	--
	EPE-15	--	6 482 400(b)	--	650 963	- 10 478	--	18 489 253
	EPE-16	--	400 000	--	98 625	101	--	3 307 155
	EPE-17	250 000	--	--	--	29 335	--	--
	EPE-18	--	179 000	--	5 715	9	--	175 428
	EPE-19	201 480	--	58 678	--	- 1 625	4 109 383	--
	EPE-28	1 000	--	40	--	--	3 481	--
TOTAL				2 238 222	847 868	5 609	118 951 803	26 192 529

13. Exports 1991 (Megawatt Hours) (cont'd)

Exporter	Licence Number	Licence Authorization		Gross Energy Exported			Value of Export (\$)	
		Firm	Interruptible	Firm	Interruptible	Exchange(a)	Firm	Interruptible
QUEBEC								
Hydro-Québec	EL-96 *	3 000 000	--	--	--	38 133	4 209 768	--
	EL-151	--	11 000 000	--	--	--	--	--
	EL-152	--	23 564 000(c)	--	80 517	--	--	2 376 767
	EL-153	--	23 564 000(c)	--	994 930	456 325	--	26 057 800
	EL-154	11 220 000	--	1 699	--	--	83 735	--
	EL-156	25 000	--	--	--	--	--	--
	EL-165	--	3 000 000	--	--	--	--	--
	EL-166	--	4 000 000	--	--	--	--	--
	EL-167	--	6 920 000(d)	--	303 722	- 289 961	--	7 968 880
	EL-168	1 314 000	--	938 758	--	--	32 233 005	--
	EL-169	--	1 752 000(e)	--	--	- 78 602	--	--
	EL-176	9 000 000	--	2 919 223	--	--	64 057 271	--
	EL-178	3 000 000	--	13 277	--	--	6 028 377	--
	EL-179	350 000	--	213 559	--	--	9 445 143	--
	EL-181	400 000	--	305 537	--	--	14 922 858	--
	ELO-223 *	--	946 000(f)	--	--	--	--	--
	ELO-224 *	400 000	--	--	--	--	--	--
	EPE-04 *	--	--	--	--	--	--	--
	to EPE-06 *	--	--	89	--	--	5 540	--
	and ELO-230 *	--	--	--	--	--	--	--
	to ELO-237 *	3 595	--	117	--	--	8 121	--
	ELO-255 *	400 000	--	11 968	--	--	1 783 949	--
	EPE-20	10512	--	932	--	--	63 064	--
TOTAL				4 405 159	1 379 169	125 895	132 840 831	36 403 447

13. Exports 1991 (Megawatt Hours) (cont'd)

Exporter	Licence Number	Licence Authorization		Gross Energy Exported			Value of Export (\$)	
		Firm	Interruptible	Firm	Interruptible	Exchange(a)	Firm	Interruptible
ONTARIO								
Boise Cascade Canada Ltd.	ELO-265	--	175 000	--	--	--	--	--
Canadian Niagara Power Company Limited	ELO-269	--	250 000	--	--	175 266	--	--
	ELO-270	--	200 000	--	--	12 944	--	--
	EPE-08	225 000	--	208 993	--	--	5 209 906	--
The Canadian Transit Company	ELO-239	25	--	20	--	--	--	--
Cornwall Electric	ELO- 267	--	30 000	--	10 677	--	--	260 735
	ELO- 268	--	30 000	--	--	--	--	--
The Detroit and Windsor Subway Company	ELO-252	2 000	--	896	--	--	--	--
	EPE-26	3 000	--	107	--	--	--	--
Ontario Hydro and 								

13. Exports 1991 (Megawatt Hours) (cont'd)

Exporter	Licence Number	Licence Authorization		Gross Energy Exported			Value of Export (\$)	
		Firm	Interruptible	Firm	Interruptible	Exchange(a)	Firm	Interruptible
SASKATCHEWAN								
Saskatchewan Power Corporation	EL-118	438 000(j)	--	--	--	57 300	--	--
	EL-119	--	876 000(k)	--	58 646	32 234	--	685 417
	EL-120	876 000(k)	--	--	--	--	--	--
TOTAL				--	58 646	89 534	--	685 417
BRITISH COLUMBIA								
British Columbia Hydro and Power Authority	EL-162	6 000 000	--	1 080 216	--	--	31 275 882	--
	EL-163	--	15 000 000(l)	--	3 996 115	889 457	--	83 812 033
	EL-164	--	3 000 000	--	--	579 142	--	--
	ELO-251	--	--	607	--	--	53 377	--
	EPE-27	1 200	--	55	--	--	5 192	--
	EPE-02	15 164	--	18 408	--	--	1 067 084	--
	(m)	--	--	--	--	330 086	--	--
Cominco Ltd.	EPE-9	50 000	--	--	--	--	--	--
	EPE-10	250 000	--	--	--	--	--	--
	EPE-11	--	1 000 000	--	173 993	2 400	--	3 182 153
	EPE-12	--	1 000 000	--	--	--	--	--
West Kootenay Power and Light Company, Limited	EPE-13	50	--	19	--	--	1 465	--
TOTAL				1 099 305	4 170 108	1 801 085	32 403 000	86 994 186
TOTAL CANADA(n)				8 789 361	11 039 205	4 640 752	311 599 464	247 524 179

a - Exchange includes inadvertent and circulating flow, equichange, storage, adjustment transfer, and wheeling or carrier transfer which normally do not have associated revenue.

b - Total exports should not exceed 6 482.4 GW.h less any amounts exported pursuant to another licence or order under which the energy is transmitted over the line authorized by Certificate EC-III-8.

c - Total exports should not exceed 23 564 GW.h less any amounts exported pursuant to another licence under which the energy is transmitted over the lines authorized by Certificates EC-III-15 and EC-10.

d - Total exports should not exceed 6 920 GW.h less any amounts exported pursuant to another licence under which the energy is transmitted over the lines authorized by Certificate EC-III-21.

e - Total exports should not exceed 1 752 GW.h less any amounts exported under Licence EL-168.

f - Total exports should not exceed 657 GW.h less any amounts exported under Licence EI-171 and Orders ELO-223 and ELO-224.

g - Total exports should not exceed 946 GW.h less any amounts exported under Licences EL-171, EL-172 and Order ELO-224.

h - Total exports should not exceed 25 000 GW.h less any amounts exported under Licence EL-135.

i - Total exports should not exceed 12 000 GW.h less any amounts exported under Licences EL-97, EL-98, EL-99, EL-100, EL-101 and EL-102.

j - Energy to be returned.

k - Total exports under Licences EL-119 and EL-120 should not exceed 876 GW.h. when combined together.

l - Total exports should not exceed 15 000 GW.h less any amounts exported under Licence EL-162.

m - Energy exported in accordance with the Skagit River Valley Treaty which is not under the Board's jurisdiction.

n - Excludes \$6 159 977 revenue for wheeling, transmission, unit rental and storage transfer charges.

* Expired during 1991.

14. Electricity Trade Between Canada and the United States^(a) (By Province, Gigawatt Hours)

PROVINCE	REGION / STATE	EXPORT (b)	IMPORT (c)	NET EXPORT (b) - (c)
New Brunswick	Maine	1344	56	1288
	Massachusetts	1744	0	1744
Total New Brunswick		3088	56	3032
Quebec	Vermont	1472	141	1331
	New England (d)	3223	374	2849
	New York	1089	92	997
Total Quebec		5784	607	5177
Ontario	Vermont	23	0	23
	New York	2183	663	1520
	Michigan	108	0	108
	Minnesota	0	51	-51
Total Ontario		2314	714	1600
Manitoba	Minnesota	3120	217	2903
	North Dakota	195	45	150
Total Manitoba		3315	262	3053
Saskatchewan	North Dakota	59	46	13
Alberta	Montana	0	3	-3
British Columbia	Montana	25	0	25
	Washington	739	0	739
	Oregon	1323	0	1323
	California	3029	0	3029
	Other (e)	152	0	152
Total British Columbia		5268	0	5268
TOTAL		19828	1688	18140

Notes: (a) Sales and purchases only; excludes exchanges.

(b) Sales to the United States.

(c) Purchases from the United States.

(d) Trade with the New England Power Pool - quantities to each state cannot be accurately determined.

(e) Includes Idaho, Nevada and Alaska.

15. Electricity Trade Between the United States and Canada^(a)
(By American Region / State, Gigawatt Hours)

REGION / STATE	PROVINCE	IMPORT (b)	EXPORT (c)	NET IMPORT (b) - (c)
New England				
Maine	New Brunswick	1344	56	1288
Massachusetts	New Brunswick	1744	0	1744
Vermont	Quebec	1472	141	1331
	Ontario	23	0	23
New England (d)	Quebec	3223	374	2849
Total New England		7806	571	7235
New York				
	Quebec	1089	92	997
	Ontario	2183	663	1520
Total New York		3272	755	2517
Michigan				
	Ontario	108	0	108
Midwest				
Minnesota	Ontario	0	51	-51
	Manitoba	3120	217	2903
North Dakota	Manitoba	195	45	150
	Saskatchewan	59	46	13
Total Midwest		3374	359	3015
Western				
Montana	Alberta	0	3	-3
	British Columbia	25	0	25
Washington	British Columbia	739	0	739
Oregon	British Columbia	1323	0	1323
California	British Columbia	3029	0	3029
Other (e)	British Columbia	152	0	152
Total Western		5268	3	5265
TOTAL		19828	1688	18140

Notes: (a) Sales and purchases only; excludes exchanges.

(b) Purchases from Canada.

(c) Sales to Canada.

(d) Trade with the New England Power Pool - quantities to each state cannot be accurately determined.

(e) Includes Idaho, Nevada and Alaska.

Canada

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ANNUAL

REPORT

NATIONAL ENERGY BOARD



METRIC CONVERSION TABLES

The National Energy Board uses the International System of Units (SI). The energy units most commonly referred to in this report are the gigajoule (GJ) and the petajoule (PJ). A 30-litre gasoline fill-up contains about one gigajoule of energy. A petajoule is one million gigajoules. On average, a city the size of Toronto uses a petajoule of energy for all uses (heat, light, transportation, etc.) about every 15 hours.

The following conversion table is provided for the convenience of readers who may be more familiar with the Imperial System.

Approximate Conversion Factor

metre (m)	=	3.28 feet
kilometre (km)	=	0.62 mile
millimetre (mm)	=	0.039 inch
cubic metre (m ³) of oil	=	6.3 barrels
cubic metre (m ³) of natural gas	=	35.3 cubic feet
litre (L)	=	0.22 Imperial gallon
kilogram (kg)	=	2.20 pounds
gigajoule (GJ)	=	0.95 thousand cubic feet of natural gas at 1000 Btu per cubic foot or 0.165 barrels of oil, or 0.28 megawatt hours of electricity
petajoule (PJ)	=	one million gigajoules

Abbreviations

gigajoule (GJ)	=	10 ⁹ J
terajoule (TJ)	=	10 ¹² J
petajoule (PJ)	=	10 ¹⁵ J
exajoule (EJ)	=	10 ¹⁸ J
kilowatt (KW)	=	10 ³ watts
megawatt (MW)	=	10 ³ KW
megawatt hour (MW.h)	=	10 ³ KW.h
gigawatt hour (GW.h)	=	10 ⁶ KW.h
terawatt hour (TW.h)	=	10 ⁹ KW.h

ERRATA

NATIONAL ENERGY BOARD 1992 ANNUAL REPORT

Page 25 of the 1992 National Energy Board Annual Report contains errors in references to Figures and appendices.

In the section "Pipeline Facilities", paragraph 1, last line, for Figure 1 and Figure 2, read Figure 15 and Figure 16. Paragraph 2, last line, for Appendices B (Oil) and C (Gas), read Appendices C (Oil) and D (Gas).



ERRATA

OFFICE NATIONAL DE L'ÉNERGIE RAPPORT ANNUEL 1992

Deux erreurs se sont glissées dans la table de conversion au système métrique de la première page de couverture intérieure du rapport annuel de l'Office national de l'énergie. Le facteur de conversion doit se lire ainsi : gigagoule (GJ) = 950 pieds cubes de gaz à 1 000 Btu/pied cube ou 0,165 baril de pétrole ou encore 0,28 mégawattheure d'électricité.

Par ailleurs, à la page 27 du rapport, on trouve des erreurs relativement aux références des figures et des annexes. Sous la section Installations pipelinières, à la dernière ligne du premier paragraphe, l'expression aux figures 1 et 2 doit être remplacée par aux figures 15 et 16. À la dernière ligne du deuxième paragraphe, il faut remplacer aux annexes B (Pétrole) et C (Gaz) par aux annexes C (Pétrole) et D (Gaz).

31 March 1993

The Honourable Bill McKnight, P.C., M.P.
Minister of Energy, Mines and Resources
Ottawa, Ontario

Dear Mr. McKnight,

I am pleased to submit the Annual Report of the National Energy Board for the year ending 31 December 1992 in accordance with the provisions of Section 133 of the National Energy Board Act, R.S.C. 1985, c. N-7.

Your Sincerely,



R. Priddle
Chairman



The National Energy Board is an independent federal regulatory tribunal created by an Act of Parliament on 2 November 1959. Since its creation, the Board has played an important role in the development of Canada's energy sector.

The Board's regulatory powers under the *National Energy Board Act* include the granting of authorizations for the exportation of oil, natural gas and electricity, the certification of interprovincial and international pipelines and designated interprovincial and international power lines, and the setting of tolls and tariffs for oil and gas pipelines under federal jurisdiction.

The Act also requires that the Board keep under review the Canadian supply of all major energy commodities, with emphasis on electricity, oil, natural gas and the by-products derived from oil and natural gas, as well as the demand for Canadian energy in Canada and in export markets.

The Board also has specific responsibilities under the *Northern Pipeline Act* and the *Energy Administration Act*. In addition, Board inspectors have been appointed safety officers by the Minister of Labour to administer Part II of the *Canada Labour Code*.

In April 1991, regulatory responsibilities of the Canada Oil and Gas Lands Administration for oil and gas exploration and development in frontier lands were transferred to the Board.

Information on the functions and responsibilities of the Board is available to the public in the brochure *National Energy Board, An Introduction*, as well as in the *Estimates of the Government of Canada, Part III*.

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In 1992, the Board served the Canadian public interest in energy matters in a variety of ways. For example, it authorized \$41 million worth of activity in the North; approved the construction of over 900 kilometres of new pipeline; authorized the collection of some \$2.6 billion in pipeline tolls for gas and oil; approved the export of three trillion cubic feet of natural gas and 54 619 gigawatt hours of electricity over the next 30 years; and helped to better inform the public about Canadian energy, particularly natural gas.

This activity involved an unusually large number of oral public hearings, totalling 15 during the year. About half took place in Calgary; the rest, in keeping with the Board's national character and the regional needs of the energy industries and locally interested parties, were held in such locations as Fort St. John, Montreal, Niagara Falls, Toronto and Vancouver.

The Board recognizes that oral hearings can be costly for itself and for the public taking part. It therefore seeks to keep the use of this process to a reasonable minimum by, for example, conducting written hearings where this is appropriate. And when oral hearings are held, the Board tries to reduce their length by encouraging parties to reach prior settlements on issues, by extensive use of written information requests and then by conducting the most efficient and expeditious oral process. In this connection, an innovation introduced in 1992 requires parties to notify applicants which issues they intend to examine. This eliminates the need for the appearance of witnesses whose evidence is not going to be challenged. However, the Board also recognizes that oral hearings are often the best way of examining facts and of hearing argument in cases which involve opposing interests.

One of the most difficult regulatory decisions which the Board had to take in 1992 related to the Canada-California gas dispute. The Board counteracted the detrimental effects on the Canadian public interest of regulatory decisions taken by that state's public utilities commission. It did so after finding, in an oral hearing, that those decisions could undermine existing long-term commercial arrangements under which Canadian producers supply gas to Northern California and that they could strand financial commitments made by Canadian producers to develop gas for California. In its decision, the Board noted that these commitments had been based in part on the representations made by California regulators to the Board at the time of an export licence hearing in 1988. The Board's actions have the effect of preventing the displacement of gas contractually committed to the Northern California market on a long-term basis until there has been time for the restructuring of these contractual arrangements.

From its inception, the Board has paid particular attention to pipeline safety. It does so because it is responsible for specifying how Canadian interprovincial and international pipelines are to be constructed and operated. It investigates pipeline accidents to determine whether its regulations have been properly observed and whether they need tightening. Since 1985, the Board has been closely following the issue of stress corrosion cracking (SCC) on TransCanada PipeLines' natural gas system. During that period, it has authorized some \$75 million in expenditures by TransCanada to ensure the integrity of the system in relation to SCC. In December, the Board initiated a written inquiry concerning the Transportation Safety Board's recommendations on stress corrosion cracking

in gas pipelines and a reassessment of TransCanada's pipeline maintenance program.

During the year, the Board completed its review, the first since 1986, of Interprovincial Pipeline's tolls, setting new tolls and providing direction on the toll treatment of the Sarnia-Montreal crude oil pipeline, should it be reversed at some future date. The Board continued its work on Inter-Utility Electricity Trade Review. It released for comment two studies which identify potential economies from enhanced interprovincial and international trade. Finally, the Board initiated a process of public discussion on incentive regulation in the pipeline industry intended to examine potential new schemes for regulating the tolls of pipelines under the Board's jurisdiction. A workshop was scheduled for January 1993.

Effective 31 December 1992, the National Energy Board was granted Separate Employer Status. This means that the Board, rather than the Treasury Board of Canada, is the employer of its staff. We can therefore design job classifications and related pay scales to best fit our needs. I believe that this is the modern approach to Public Service personnel management and that it will progressively improve the Board's

efficiency. Board employees will continue to come under the Public Service Superannuation Act and, for purposes of employment opportunities elsewhere in the Public Service, will still count as though they were working in the National Capital Region. As well, Parliament will continue to vote the Board's funding requirements and all Board members and employees are subject to the current freeze on Public Service salaries.

Also in the area of organization, the administrative integration of the Board's frontier staff has continued and a new Energy Resources Directorate has been created which combines elements of the former NEB and Canada Oil and Gas Lands Administration with a view to achieving personnel efficiencies and enhancing the Board's understanding of Canada's energy resources and reserves.

The Board settled into its new Calgary headquarters, closed its Ottawa office and completed the orientation of the many new staff who had been recruited, largely in Western Canada, as a result of the 1991 relocation from Ottawa. We look forward in 1993 to giving of our best in terms of providing responsive and relevant national energy regulation and regulatory advice to government.

A handwritten signature in cursive script, reading "R. Priddle".

R. Priddle

Energy Production, Consumption and Trade

Energy production rose by one per cent in 1992, compared with 1991. Exports continued to expand and domestic consumption increased marginally after two successive years of declines.

Over the past five years there has been little change in the market shares of the major energy sources with petroleum losing about one percentage point and natural gas gaining about the same amount.

Total exports of petroleum (including crude oil, refined petroleum products and natural gas liquids), natural gas and electricity in 1992 were 4 841 petajoules, an increase of 10 per cent over 1991. Higher exports were partially offset by higher imports so that net exports increased by 6.3 per cent. The value of net exports rose by 6.7 per cent to \$9.5 billion, of which 49 per cent was accounted for by petroleum and 44 per cent by gas.

Table 1
Canadian Energy Supply and Disposition^(a)

Petajoules

	1991	1992 ^(b)	Per cent Change
Production (c)	12 905	13 045	1.1%
Imports	1 724	2 081	20.7%
Total Supply	14 629	15 126	3.4%
Domestic Use	9 200	9 311	1.2%
Exports	5 429	5 815	7.1%
Total Disposition	14 629	15 126	3.4%

(a) Includes petroleum, natural gas, coal, hydro and nuclear electricity, renewables and other.

(b) Estimate

(c) Includes inventory change and other adjustments.

Table 2
Canadian Energy Consumption

Market Share (%) by Energy Source

	1988	1989	1990	1991	1992 ^(a)
Petroleum	35.3	36.1	36.4	33.8	34.0
Natural Gas	24.8	25.9	26.1	26.0	26.4
Hydroelectricity	11.5	10.6	11.3	12.0	12.1
Nuclear	10.0	9.6	8.9	10.5	9.8
Coal	12.6	12.3	11.5	11.8	11.9
Renewable, Other	5.8	5.6	5.8	5.9	5.8
Total - Market Shares	100.0	100.0	100.0	100.0	100.0
Total - Petajoules	9 551	9 769	9 359	9 200	9 311

(a) Estimate

Source: Energy Overview Appendix

Exploration and Development Activity

Overall, activity in the Canadian oil and gas industry decreased somewhat during 1992, compared with 1991. Gas exploration activity declined again; however, oil-directed activity was up marginally due to lower royalties and attractive prospects for horizontal drilling.

Canadian oil and gas industry spending at provincial and federal land sales totalled \$207 million in 1992, the lowest level in five years and down about 46 per cent from the \$384 million spent in 1991. The provincial and federal governments leased the mineral rights to two million hectares (4.9 million acres) during 1992, compared with 2.8 million hectares (6.9 million acres) in 1991. The average price per hectare in 1992 was \$109 (\$44 per acre), down 21 per cent

from \$137 per hectare (\$56 per acre) in 1991. Figures 1 and 2 summarize land sale activity for the past five years.

The number of wells drilled decreased by 13 per cent to about 4 700 wells in 1992, compared with 5 400 wells in 1991 (Figure 3).

On average, rig activity in 1992 was lower than 1991, and at the lowest level in the past five years. As in previous years, activity peaked during the winter season (Figure 4). The average rig utilization rate declined to 28 per cent in 1992 from 31 per cent in 1991.

Geophysical activity in 1992 was lower than the 1991 level in almost every month, both in terms of the average number of active crews per month and the number of kilometres of seismic shot per month. The average number of active crews per month for the last five years is illustrated in Figure 5.

Table 3

Canadian Trade in Petroleum, Natural Gas and Electricity

(Petajoules and Billion Dollars)

	1991		1992(a)	
	PJ	\$Billions	PJ	\$Billions
Exports				
Petroleum(b)	2 514	10.1	2 625	10.2
Natural Gas	1 808	3.6	2 122	4.4
Electricity(c)	71	0.6	94	0.7
Total Exports	4 393	14.3	4 841	15.3
Imports				
Petroleum(b)	1 338	5.2	1 521	5.5
Natural Gas	21	0.1	95	0.2
Electricity(c)	6	0.1	7	0.1
Total Imports	1 365	5.4	1 623	5.8
Net Exports	3 028	8.9	3 218	9.5

(a) Estimate

(b) Includes petroleum products and natural gas liquids.

(c) Electricity is converted at 3.6 petajoules per terawatt hour on the basis of the energy content of the electricity output. Excludes exchanges between Canada and the United States.

Exploration and development expenditures in Canada during 1992 were \$6.4 billion, compared with \$6.7 billion spent in 1991. The 1992 level is comparable with the average annual expenditures over the past five years in conventional areas (Figure 6).

Oil

International Oil Markets

In 1992, world crude oil prices fluctuated within a range of three to four dollars per barrel. The price of the North American benchmark crude, West Texas

Figure 1
Land Sales

(Million Hectares Leased)

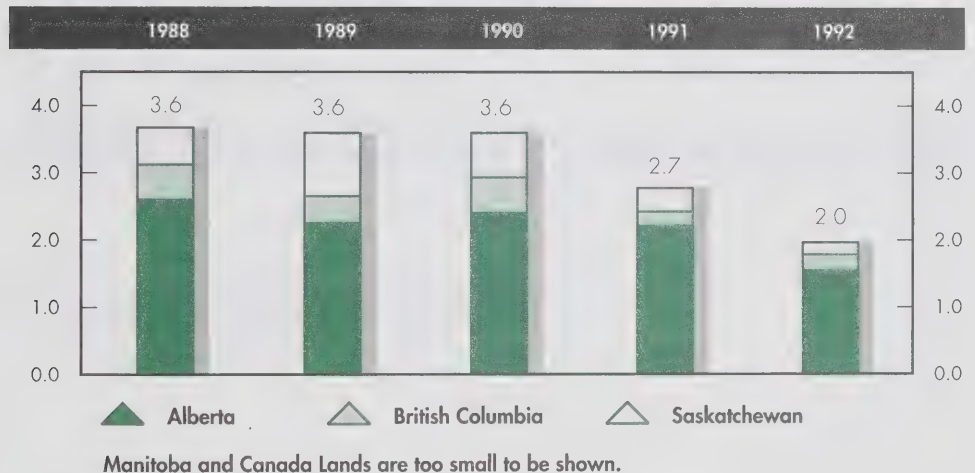


Figure 2
Land Sales

(Total Bonuses – Million Dollars)

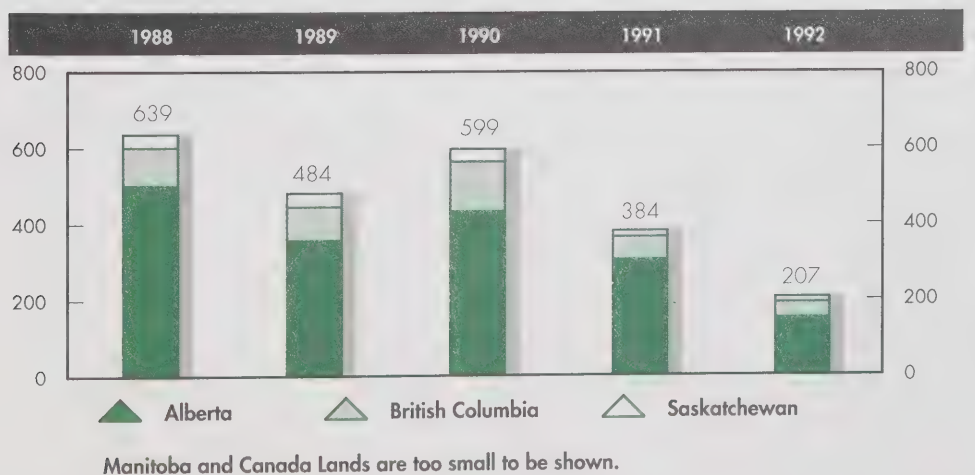


Figure 3
Canadian Wells Drilled

(Thousands)

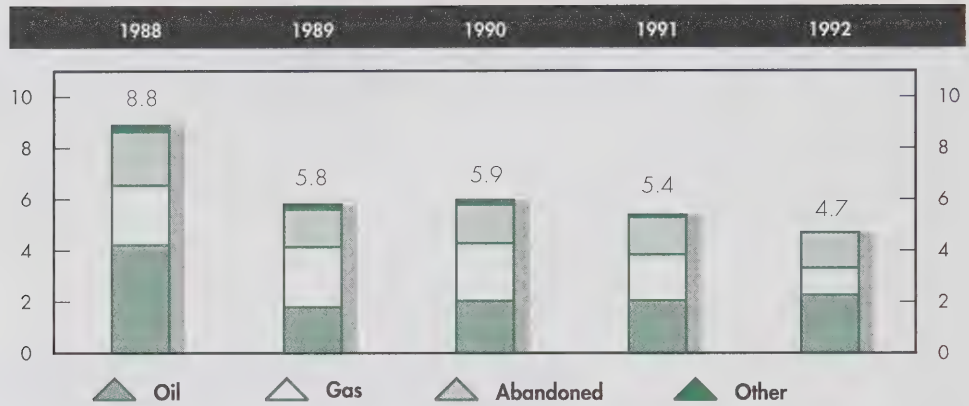
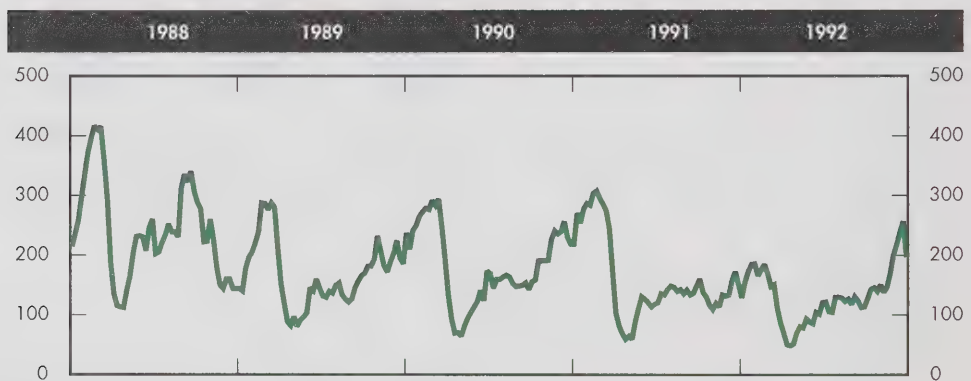


Figure 4
Canadian Rig Activity

(Number of Rigs Drilling per Week)



Intermediate (WTI) at Cushing, Oklahoma, averaged \$20.55 (US) per barrel, compared with its 1991 average of \$21.50 (US).

World oil demand was an estimated 67 million barrels per day in 1992, some 400 000 barrels per day higher than in 1991. Over the last five years, world oil demand has grown on average by about 1.6 per cent per year. In 1992, all regions experienced moderate growth,

with two exceptions: in Asia, oil consumption rose by about nine per cent in 1992 to 6.3 million barrels per day while, in the former USSR, oil demand is estimated to have declined to 7.2 million barrels per day in 1992 from 8.3 million barrels per day in 1991.

Compared with 1991, total crude production by all countries outside the Organization of Petroleum Exporting Countries (OPEC) fell by 900 000 barrels

Figure 5
Geophysical Activity
(Average Number of Crews Active per Month)

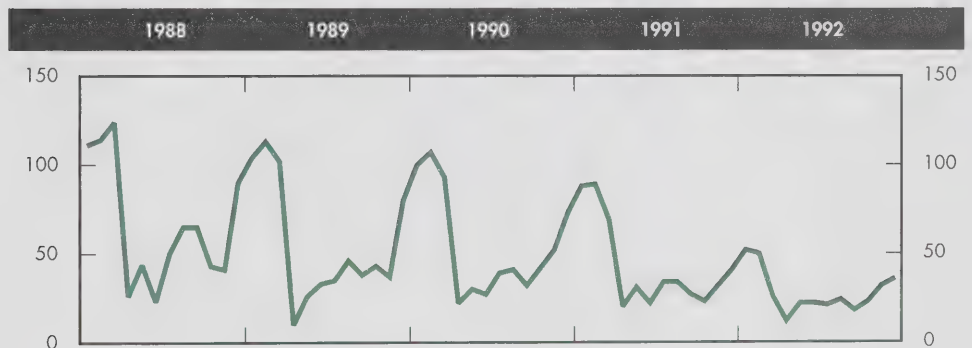
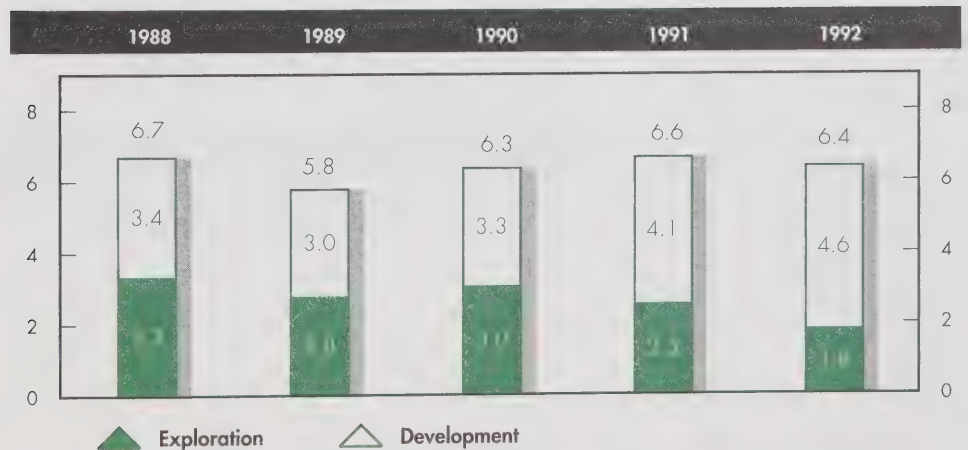


Figure 6
Exploration and Development Expenditures
(Billion Dollars)



per day in 1992 to 40.5 million barrels per day. In the former USSR, crude oil production fell by 1.4 million barrels per day to nine million barrels per day, which is about 3.5 million barrels per day below the peak level of 12.6 million achieved in 1988.

OPEC crude oil production in 1992 was 24.4 million barrels per day, up from the 1991 average of 23.3 million barrels per day. The bulk of OPEC's increased production came from Kuwait, where production rose from 130 thousand barrels per day in 1991 to 1.2 million barrels per day by the fourth quarter of 1992. Iraq averaged about 430 000 barrels per day, compared with almost three million before the outbreak of the Gulf war in July, 1990.

Canadian Oil Reserves

The Board's estimates of initial (pre-production) established reserves of conventional crude oil in Canada increased 58.6 million cubic metres (369 million barrels) from the estimate for year-end 1990, due to new discoveries, extensions to existing pools and revisions to estimates of reserves in existing pools. Reserves additions replaced nearly 85 per cent of conventional crude oil production in 1991.

The Board's estimate of remaining reserves of conventional crude oil, as of 31 December 1991, is 676.4 million cubic metres (4.3 billion barrels). Compared with year-end 1990, this is a decrease of about two per cent or 11.9 million cubic metres (75 million barrels). Table 4 illustrates the trend of conventional crude oil reserves additions relative to production over the five years, 1987-1991, when cumulatively, additions replaced 85 per cent of oil production.

The estimates of the initial and remaining established reserves for crude bitumen contained in Table 5 are for developed projects only, and are based on estimates provided in the Alberta Energy Resources Conservation Board's annual reserves report.

Crude Oil and Petroleum Products

Production of Canadian Crude Oil

Crude oil production in Canada averaged 276 100 cubic metres (1.74 million barrels) per day in 1992, an increase of five per cent over the level in 1991. Available supply of crude oil and equivalent, after blending and upgrading portions of the heavy crude oil production to synthetic light crude oil in the

Figure 7
Average Price of WTI at Cushing
(\$US per barrel)

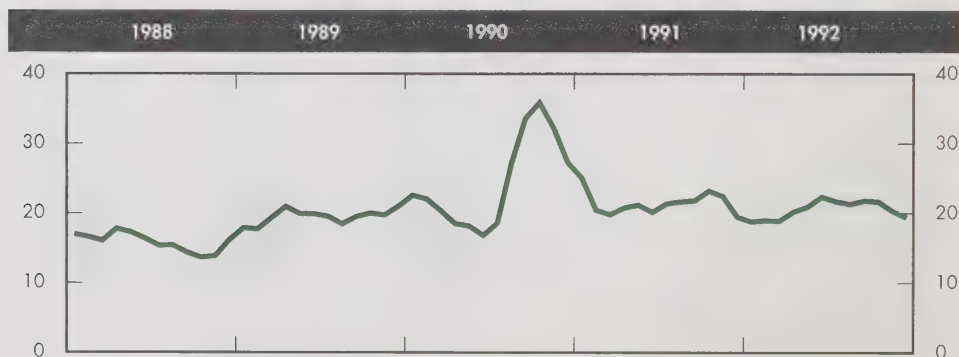


Table 4**Conventional Crude Oil Reserves Additions and Production**

(Million Cubic Metres)

	Additions	Production
1987	46	71
1988	35	74
1989	109	70
1990	52	70
1991	59	71
Total	301	356

Table 5**Estimated Established Reserves of Crude Oil at 31 December 1991**

(Million Cubic Metres)

	Initial	Remaining
Conventional Crude Oil		
British Columbia	93.2	18.5
Alberta	2 221.6	424.5
Saskatchewan	511.4	116.4
Manitoba	36.3	7.7
Ontario	12.0	1.6
Northwest Territories & Yukon ^(a)		
Mackenzie Delta and Beaufort Sea	0.0	0.0
Arctic Islands and Eastern Arctic Offshore	1.0	0.8
Mainland Territories	35.2	19.3
Nova Scotia ^(b)	7.6	7.6
Newfoundland ^(c)	80.0	80.0
Total Conventional Crude Oil	2 998.3	676.4
Crude Bitumen ^(d)		
Surface-mineable	644.0	451.0
In Situ	102.8	50.7
Total Crude Bitumen	746.8	501.7
Total (Conventional Oil & Bitumen)	3 745.1	1 178.1

(a) For the purpose of this table, the Northwest Territories and Yukon are divided into three geographic regions. The reserves for the Arctic Islands and Eastern Arctic Offshore region represent only the Bent Horn field. The reserves for the Mainland Territories region are composed totally of the Norman Wells field.

(b) The reserves for Nova Scotia represent only the Cohasset and Panuke fields.

(c) The reserves for Newfoundland are composed totally of the Hibernia field.

(d) Source: Alberta Energy Resources Conservation Board, Report ST92-18 (based on developed projects only).

Newgrade and Husky upgraders, amounted to 277 800 cubic metres (1.75 million barrels) per day in 1992 (Table 6).

Total Canadian production of conventional light crude oil amounted to about 138 thousand cubic metres (868 thousand barrels) per day. The Cohasset/Panuke development off the East Coast started production in June, at a rate of 3 100 cubic metres (19 500 barrels) per day. Production was discontinued for the winter season in

December. Production during the operating season averaged 2 700 cubic metres (17 thousand barrels) per day.

Synthetic crude oil production from the **Syncrude Canada Ltd.** and **Suncor Inc.** mining plants in Northeast Alberta averaged 37 600 cubic metres (236 500 barrels) per day in 1992, five per cent higher than in 1991 in spite of a major fire at the Suncor plant in early April and a major power failure in December. The **Federated Cooperatives Newgrade Upgrader** at Regina produced

Table 6
Production and Available Supply of Crude Oil and Equivalent
(Thousand cubic metres per day)

	Production		Available Supply ^(b)	
	1991	1992(a)	1991	1992(a)
Western Canada				
Light Crude Oil	135.8	135.3	135.8	135.3
Synthetic Crude Oil	35.9	37.6	42.7	(c) 47.4
Pentanes Plus	19.3	21.5	7.0	(d) 8.9
Eastern Canada	0.7	2.3	0.7	2.3
Total Light	191.8	196.7	186.3	193.9
Heavy Crude Oil	52.8	59.2	-	(e) -
Bitumen	19.4	20.3	-	(e) -
Total Heavy	72.2	79.4	78.9	(f) 83.9
Total Canada	264.0	276.1	265.2	277.8

(a) Estimate

(b) Available supply is the distribution of production available to refineries after a portion of the heavy crude oil has been upgraded to synthetic crude oil and a portion of the pentanes plus has been blended with heavy crude oil to facilitate transportation.

(c) Includes production from heavy crude oil upgraders as well as production from mining plants.

(d) Pentanes plus production less net diluent requirement.

(e) Not applicable.

(f) Heavy crude oil production, bitumen production and total diluent required minus upgrader feedstock.

	1991	1992
Total Diluent Required	13.3	13.9
Recycled Diluent	1.0	1.3
Net Diluent Requirement	12.3	12.6
Upgrader Feedstock	6.6	9.4
Upgrader Production	6.8	9.8
Upgrader Net Production	2.0	4.8

8 300 cubic metres (52 200 barrels) per day of synthetic crude oil, an increase of 22 per cent over the previous year. Of this production, only a small portion (net production) is marketed as synthetic crude oil while the remainder is used directly by the adjoining refinery to produce petroleum products. The **Husky Oil Operations Ltd.** BiProvincial Upgrader at Lloydminster, Saskatchewan, started to produce synthetic crude oil in July and was officially opened in November. Production from startup through year-end averaged 3 100 cubic metres (19 500 barrels) per day.

Pentanes plus production increased significantly because of increased natural gas production.

The production of heavy crude and bitumen averaged 79 400 cubic metres (499 400 barrels) per day in 1992, an increase of 10 per cent over the level in 1991. This large increase was the result of increased demand for heavy oil due to the startup of the **Husky** upgrader and the **Conoco Inc.** upgrader in Montana. Much of the heavy crude production is shipped as a blend with pentanes plus in order to meet pipeline specifications.

Oil Refining

In 1992, the demand for main petroleum products in Canada fell by about one per cent, with declines in heavy fuel oil and middle distillates. Demand for motor gasoline and aviation turbine fuel increased marginally. Refinery production declined by two per cent and imports of main petroleum products fell by 16 per cent. Exports of main petroleum products declined by 15 per cent.

Canadian refineries received domestic crude oil at a rate of 144 800

cubic metres (912 thousand barrels) per day, a decline of two per cent from 1991. Receipts of foreign crude oil declined by five per cent to 87 000 cubic metres (548 thousand barrels) per day.

Crude Oil Imports

In 1992, crude oil imports represented 37 per cent of total refinery feedstock requirements in Canada, compared with 38 per cent in 1991. On a regional basis, the Atlantic region depended totally on foreign crude oil. Quebec imported approximately 99 per cent of its requirements, compared to 94 per cent in 1991. The increase reflects the temporary closure of the Sarnia to Montreal pipeline in mid-1991. Ontario continued to import a small quantity of crude oil, primarily from the United States.

Crude oil originating from OPEC countries represented 29 per cent of total imports in 1992, down from 32 per cent in 1991. North Sea crudes amounted to 59 per cent of total crude oil imports, equal to the 1991 level. Crude oil imports from other sources accounted for 12 per cent, up three percentage points from 1991.

Crude Oil Exports

Total crude oil exports, including synthetic crude, were 134 thousand cubic metres (844 thousand barrels) per day, up 10 per cent from the 1991 level of nearly 122 thousand cubic metres (768 thousand barrels) per day. The 1992 total was comprised of about 74 thousand cubic metres (466 thousand barrels) per day of light crude oil and equivalent and nearly 60 thousand cubic metres (378 thousand barrels) per day of blended heavy crude oil.

The estimated value of crude oil exports in 1992 was \$6.0 billion, compared with \$5.2 billion in 1991. The increase was accounted for by higher export volumes and higher prices for heavy crude exports. Prices for light crude oil exports were approximately the same as in 1991, with the lower value for the Canadian dollar in 1992 tending to offset the oil price decline, as measured in U.S. dollars.

The U.S. Midwest continued to be Canada's most important market. Smaller volumes were shipped to the U.S.

West Coast, to the Far East and the U.S. Gulf Coast from the Westridge dock in Vancouver.

The largest export buyers of light Canadian crude oil in 1992 were **Amoco Oil Corporation, Clark Oil and Refining Corporation, Koch Refining Company, Mobil Oil Corporation, Sun Company Inc., Ashland Oil Inc. and United Refining Company.** For heavy Canadian crude oil, the largest foreign buyers were **Koch, Mobil, Amoco and Conoco Inc.**

Table 7
Canadian Crude Oil Supply and Disposition

Thousand Cubic Metres per Day

	1991	1992(a)	Per cent Change
Production	264.0	276.1	4.6%
Imports	91.9	87.0	-5.3%
Total Supply(b)	355.9	363.1	2.0%
Domestic Use	236.2	231.8	-1.9%
Exports	121.9	134.0	9.9%
Total Disposition(b)	358.1	365.8	2.2%

(a) Estimate

(b) The difference between total supply and total disposition is due to inventory changes and other adjustments.

Source: Energy Overview Appendix

Figure 8
Light and Heavy Crude Oil Export Prices

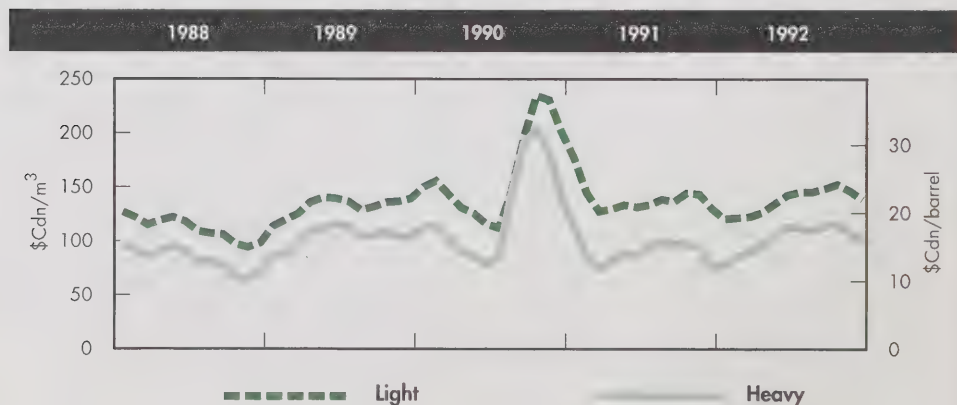


Figure 9
Canadian Crude Oil Supply and Disposition 1992
 (Thousand Cubic Metres per Day)

Domestic crude oil refined in Canada	144.8
Domestic crude oil exported from Canada	134.0
Imported crude oil refined in Canada	
North Sea	51.3
Western Hemisphere	15.2
Middle East	13.1
Other	7.4
Total	87.0



Main Petroleum Product Imports

In 1992, imports of main petroleum products averaged 10 500 cubic metres (66 thousand barrels) per day, a decrease of 16 per cent from 1991. Imports of all products declined with the exception of jet fuel. The bulk of the decrease, however, occurred in heavy fuel oil.

Main Petroleum Product Exports

Exports in 1992 of main refined petroleum products and partially

processed oil decreased 13 per cent to 29 900 cubic metres (188 thousand barrels) per day. A 15 per cent decrease in shipments of middle distillates was the main reason, although all products declined. On a regional basis, exports from the Atlantic provinces and from Ontario showed declines. The Atlantic provinces accounted for about 43 per cent of the total exports.

The estimated value of main petroleum product exports, including partially processed, was \$1.4 billion in

Figure 10
Main Petroleum Products
Average F.O.B. Export Price

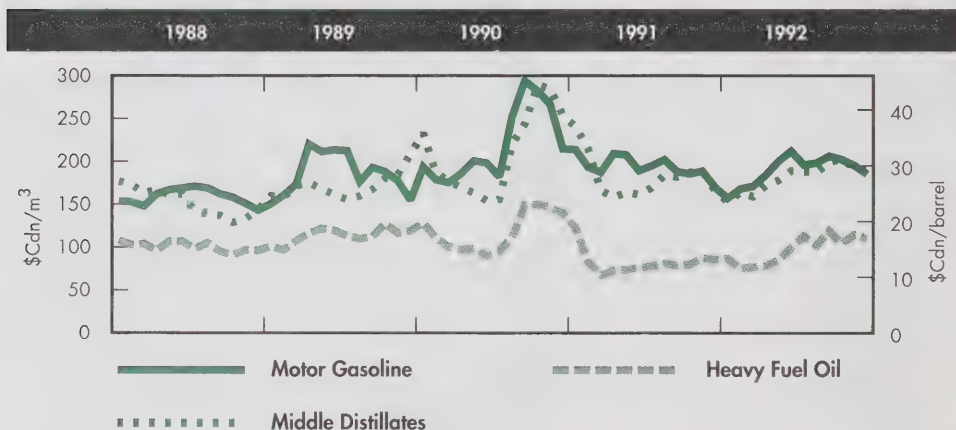


Table 8
Petroleum Product Exports, 1992(a)
(Thousand Cubic Metres)

	Motor Gasoline	Middle Distillates	Aviation Turbine Fuel	Heavy Fuel Oil	Partially Processed Oil	Total(b)
Atlantic	1 775	2 114	9	677	140	4 715
Quebec	113	420	0	682	0	1 215
Ontario	730	851	36	538	0	2 155
Prairies	296	525	168	25	0	1 014
British Columbia	867	560	273	146	3	1 849
Total	3 781	4 470	486	2 068	143	10 948

(a) Preliminary

(b) Excludes propane, butanes, lubricants, greases and asphalt.

1992, down from \$1.5 billion in 1991. This value excludes product exports from crude oil processing agreements for which prices are not assigned.

The United States continued to be Canada's largest buyer of petroleum products, receiving almost 91 per cent of total exports, compared with 87 per cent in 1991. Exports were also made to the Far East and Europe. In the United States, the East Coast continues to be the largest recipient of Canadian refined petroleum products, followed by the Midwest. The largest exporters of main petroleum products were **Newfoundland Processing Limited, Imperial Oil Limited, Irving Oil Limited, Shell Canada Limited** and **Petro-Canada Products**.

Oil Pipeline Capacity

During 1992, **Interprovincial Pipe Line Inc. (IPL)** generally operated at capacity on the Edmonton to Sarnia part of its system. New procedures developed by IPL and the industry to reduce apportionment were implemented on a trial basis in early 1992. While these procedures were partially successful, the volumes nominated for shipment on the system exceeded capacity in all months except for April, resulting in monthly apportionment.

In July 1991, IPL's Line 9 from Sarnia to Montreal was shut down. However, in July 1992, the Alberta Petroleum Marketing Commission (APMC) began injecting crude oil into Line 9 for delivery to Montreal, following the Board's approval of an integrated toll for west-to-east shipments.

Although throughputs increased in 1992, **Trans Mountain Pipe Line Company Ltd.** had spare capacity on its system during most of the year.

Natural Gas

Natural Gas Reserves

During 1991, the Board's estimate of initial established reserves of marketable natural gas increased by 118 billion cubic metres (4.2 trillion cubic feet), or three per cent, compared with the estimate at year-end 1990. Most of this increase, 86 billion cubic metres (three trillion cubic feet), occurred in Alberta. Reserve additions replaced 103 per cent of production in 1991.

The Board's estimate of remaining established reserves of marketable natural gas is contained in Table 9. As of 31 December 1991, remaining reserves of marketable gas were 2 280 billion cubic metres (80.5 trillion cubic feet). Alberta's remaining reserves increased by less than one per cent while British Columbia and Saskatchewan respectively recorded an increase of four per cent and three per cent. Table 10 illustrates the trend of marketable natural gas reserves additions relative to production over the five-year, 1987-1991 when, cumulatively, additions replaced 107 per cent of gas production.

Domestic Supply and Demand

Marketable natural gas production in Canada is estimated at 110 billion cubic metres (3.9 trillion cubic feet) in 1992. This represents an increase of about three per cent over the 1991 production volumes of 106.4 billion cubic metres (3.7 trillion cubic feet). Domestic demand is estimated to have increased by 3.5 per cent.

Imports of natural gas in 1992 were 2 575 million cubic metres (91 billion cubic feet), an increase from the 1991 level of approximately 550 million cubic metres (19 billion cubic feet). About 31 per cent of the gas imported

entered Canada by displacement near Niagara Falls, Ontario. Imports near Windsor and Sarnia accounted for 26 and 24 per cent respectively.

Natural Gas Export Prices

Canadian gas export prices reflect developments in the United States market. Overall, the average U.S. well-head price rose to \$1.69 (US) per thousand cubic feet in 1992, from \$1.64 (US) per thousand cubic feet in 1991, a rise of about three per cent. The average city-gate price was unchanged at \$2.90 (US) per thousand cubic feet.

Price changes were mixed in the market areas where Canadian exports compete with American natural gas. As reported by the United States Department of Energy, city-gate prices in California declined by about one per cent in 1992, to \$2.77 (US) per thousand cubic feet. In the Pacific Northwest, prices were up by about two per cent to \$2.19 (US) per thousand cubic feet. Prices in the Central Region rose by nearly four per cent in 1992 to \$3.14 (US) per thousand cubic feet. In the Northeast, prices rose to \$3.33 (US) per thousand cubic feet or about three per cent. Overall, Canadian

Table 9
Estimated Established Reserves of Marketable Natural Gas
at 31 December 1991
(Billion Cubic Metres)

	Initial	Remaining
British Columbia	475	238
Alberta	3 348	1 630
Saskatchewan	151	87
Ontario	40	9
Northwest Territories & Yukon ^(a)		
Mackenzie Delta & Beaufort Sea	309	309
Arctic Islands & Eastern Arctic Offshore	0	0
Mainland Territories	15	7
Total	4 338	2 280

(a) For the purpose of this table, the Northwest Territories and Yukon are divided into three geographic regions.

Table 10
Marketable Natural Gas Reserves Additions and Production
(Billion Cubic Metres)

	Additions ^(a)	Production
1987	0	81
1988	84	94
1989	187	98
1990	136	103
1991	110	106
Total	517	482

(a) Starting in 1989, the data include reserve additions and revisions for both the conventional producing areas and the frontier regions; however, the frontier regions contributed zero reserve additions in 1989. Data for 1987 and 1988 include only the conventional producing areas.

export prices on sales into the U.S. rose by 3.5 per cent, to \$2.06 per gigajoule from \$ 1.99 in 1991.

Exports

Gas exports to the United States rose by about 17 per cent in 1992, to 56.1 billion cubic metres (2.0 trillion cubic feet) from 47.8 billion cubic metres (1.7 trillion cubic feet) in 1991. Total gas export revenues also rose, by about 22 per cent, to \$4.4 billion in 1992 from \$3.6 billion in 1991.

The Central Region of the United States accounted for 42 per cent of Canada's 1992 gas export sales, California 23 per cent, the Northeast 21 per cent, the Pacific Northwest 12 per cent and the Mountain Region two per cent. The Northeast Region was responsible for the bulk of the year-over-year increase in export volumes and most of the remainder of the increase came from the Central Region. In 1992, the Canadian share of the U.S. gas market represented 10 per cent of consumption.

Sales of Canadian gas exported under short-term orders increased to 25.6 billion cubic metres (904 billion cubic feet) in 1992 from 22.9 billion cubic metres (808 billion cubic feet) in

1991. Short-term sales accounted for about 46 per cent of total natural gas exports in 1992, compared with 48 per cent in 1991.

Natural Gas Pipeline Capacity

Pipeline construction in 1992 resulted in the four largest interprovincial gas pipelines in Canada, **TransCanada PipeLines**, **Westcoast Energy**, **Foothills Pipe Line** and **Alberta Natural Gas** having a combined delivery capacity of 310 million cubic metres (10.9 billion cubic feet) per day by the end of 1992. Of this, 185 million cubic metres (6.5 billion cubic feet) per day was available to export natural gas. Over the year, exports averaged 90 per cent of the available pipeline capacity. In total, domestic and export volumes averaged 90 per cent of pipeline capacity.

Natural Gas Liquids

The total production of natural gas liquids from gas plants and refineries in 1992 is estimated to be 75.4 thousand cubic metres (475 thousand barrels) per day. Ethane production was 27.6 thousand cubic metres (174 thousand barrels) per day, propane production was 29 thousand cubic metres (182 thousand

Table 11

Canadian Natural Gas Supply and Disposition

Billion Cubic Metres

	1991	1992(a)	Per cent Change
Production	106.4	110.0	3.4%
Imports	0.5	2.6	420.0%
Total Supply(b)	106.9	112.6	5.3%
Domestic Use	57.8	59.8	3.5%
Exports	47.8	56.1	17.4%
Total Disposition(b)	105.6	115.9	9.8%

(a) Estimate

(b) The difference between total supply and total disposition is due to inventory changes and other adjustments.

Source: Energy Overview Appendix

barrels) per day and butanes production was 18.9 thousand cubic metres (119 thousand barrels) per day. The production of ethane, being limited by demand, decreased six per cent from last year, whereas the supply of propane and butanes increased by 12 per cent and five per cent, respectively.

Total exports of natural gas liquids during 1992 were 18 thousand cubic metres (113 thousand barrels) per day. Ethane exports were 1.9 thousand

cubic metres (12 thousand barrels) per day, propane exports were 11 thousand cubic metres (69 thousand barrels) per day and butanes exports were 5.2 thousand cubic metres (33 thousand barrels) per day. During 1992, ethane exports increased by 17 per cent from 1991, propane shipments rose by eight per cent and butanes exports fell by 21 per cent.

The U.S. Midwest continued to be Canada's largest market for propane and butanes, receiving almost 69 per cent

Figure 11
Natural Gas Average Export Prices
(\$Cdn/GJ)

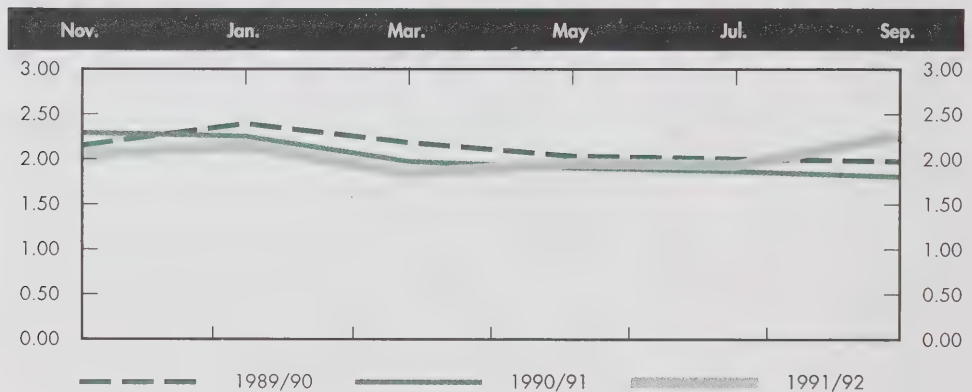


Figure 12
Natural Gas Exports by Region

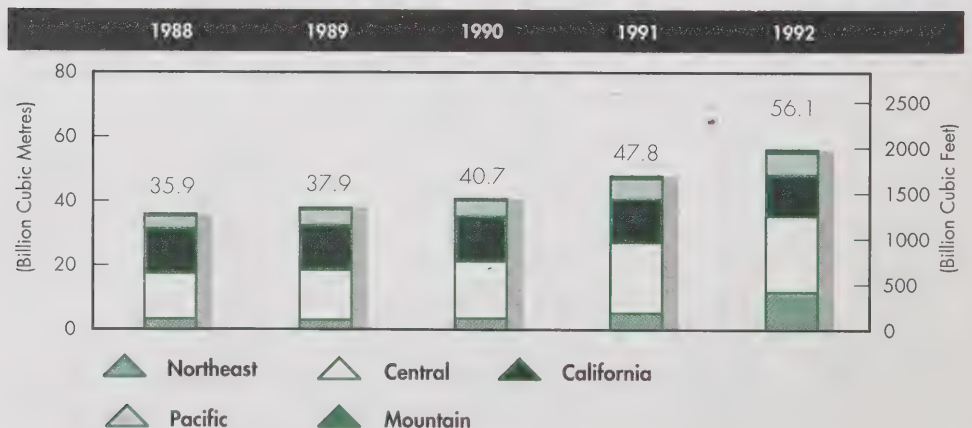


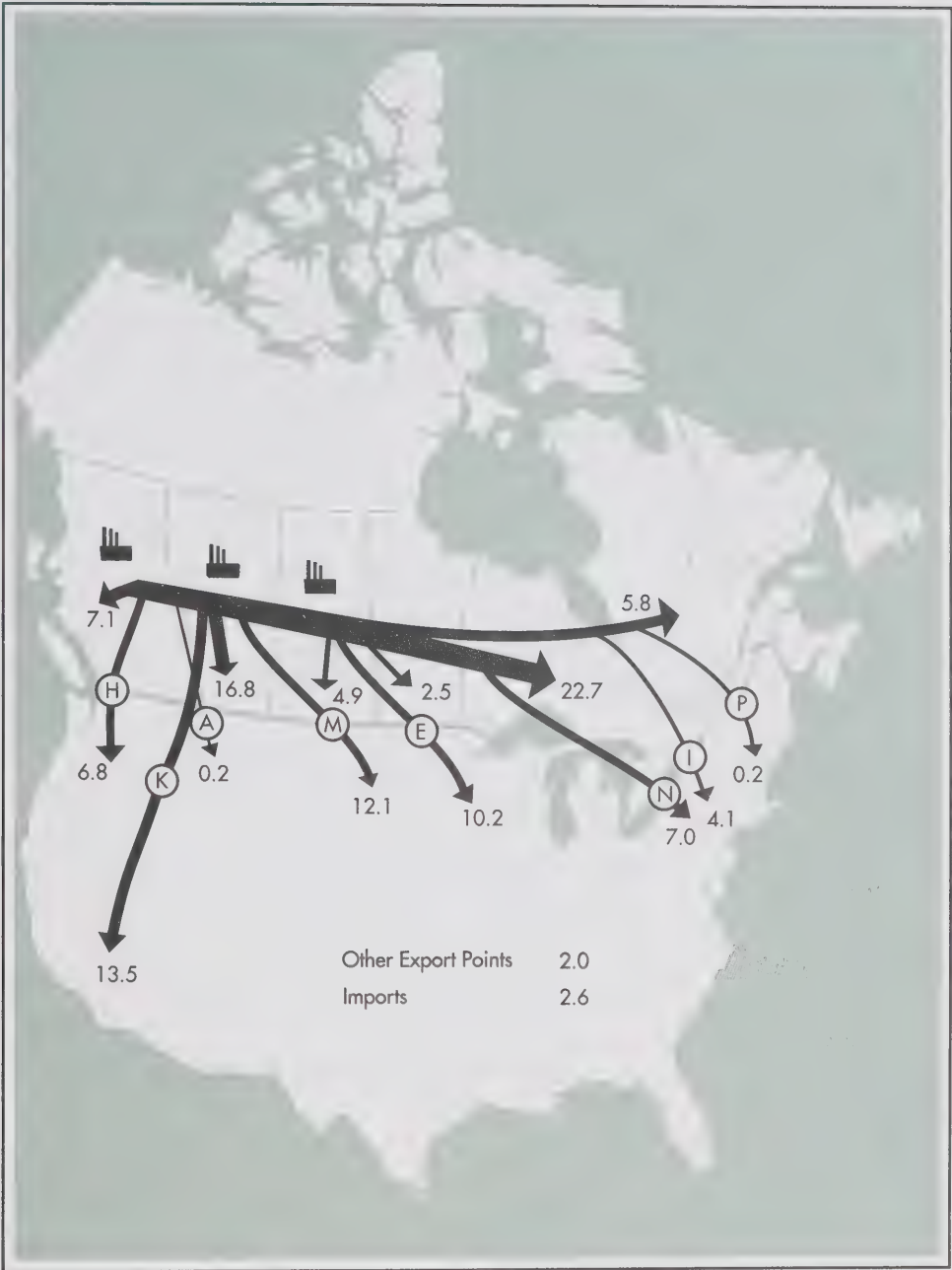
Figure 13
Natural Gas Supply and Disposition 1992

(Billion Cubic Metres)

Deliveries	
Canadian Use	59.8
Exports	56.1
Imports	-2.6
Total Deliveries	113.3

Major Export Points

(H) Huntingdon	6.8
(K) Kingsgate	13.5
(A) Aden	0.2
(M) Monchy	12.1
(E) Emerson	10.2
(N) Niagara Falls	7.0
(I) Iroquois	4.1
(P) Philipsburg	0.2



of the total export volume. Smaller amounts were delivered to the U.S. East and West Coasts.

The largest exporters of propane were **Amoco Canada Petroleum Company Ltd.**, **Petro-Canada Inc.**, **168211 Canada Limited** and **PanCanadian Gas Products Ltd.**, while the major exporters of butanes were **Amoco**, **Petro-Canada**, **Shell Canada Ltd.** and **168211 Canada Limited**.

The estimated value of natural gas liquids exports in 1992 was \$600 million, compared with \$700 million in 1991.

Electricity

Generating Capacity

In 1992, Canada's net generating capacity was about 106 200 megawatts, an increase of some 1 050 megawatts or one per cent over 1991.

Generation and Consumption

Total net generation of electricity in 1992 was an estimated 504 terawatt

hours, up two per cent from 1991 and the highest level since 1988. Of Canada's total generation, an estimated 62 per cent was supplied from hydroelectric sources, 23 per cent from conventional thermal and 15 per cent from nuclear. Total Canadian consumption in 1992 was some 480 terawatt hours, which is up about two per cent from 1991. Table 13 shows the supply and disposition of electricity for the past two years.

Exports

Export sales during 1992 continued the upward trend resumed during 1991. This increase was due to strong domestic hydraulic conditions and improved demand in U.S. markets. Total export sales were 26.2 terawatt hours, an increase of 32 per cent over 1991, with an associated revenue of \$708 million, a 27 per cent increase over last year. Firm and interruptible sales rose, by 38 per cent and 27 per cent respectively. The average price of firm exports fell eight per cent while the interruptible price remained virtually unchanged.

Table 12
Natural Gas Liquids Supply and Disposition^(a)

Thousand Cubic Metres per Day

	1991	1992 ^(b)	Per cent Change
Production	73.2	75.4	3.0%
Imports	0.6	0.7	16.7%
Total Supply ^(c)	73.8	76.1	3.1%
Domestic Use	55.8	57.0	2.2%
Exports	18.4	18.0	-2.2%
Total Disposition ^(c)	74.2	75.0	1.1%

(a) Includes ethane, propane and butanes.

(b) Estimate

(c) The difference between total supply and total disposition is due to inventory changes and other adjustments.

Source: Energy Overview Appendix

New Brunswick Power's exports were down considerably due to the expiry of two of the Point Lepreau export contracts. High reservoir levels in Quebec and increased sales of firm energy led to a 53 per cent increase in total sales over 1991 and an increase in revenue of 59 per cent. **Ontario Hydro's** interruptible exports fell by 14 per cent and the corresponding revenue by 16 per cent. **Manitoba Hydro** increased its export volume by 82 per cent and its revenue by 60 per cent, mainly due to seasonal diversity sales to Minnesota. **B.C. Hydro** also increased its sales considerably (30 per cent for volume and 53 per cent for revenue) due to good hydro conditions in the first part of 1992 and increased natural gas generation from the Burrard Thermal Generation Station and purchases from Alberta for resale to the U.S. in the latter part of the year.

Hydro still remains the leading source of production for all exports of electricity. Its share rose to 76 per cent from 71 per cent in 1991 due to strong

hydraulic conditions which prevailed throughout most of 1992. Natural gas increased to eight per cent which is up from two per cent in 1991 due to the increase in gas fired generation in B.C. Other fuels used to produce electricity for export were: nuclear at five per cent, coal at nine per cent, oil at two per cent.

Tables in the Appendices show the origin and destination of all exports, by exporting province and importing region or state. As was the case for the past four years, the New England region was the leading import region, accounting for about one-third of all Canadian electricity exports.

Imports

Imports rose only slightly to 1.8 terawatt hours during 1992 reflecting lower summer demand for electricity in Canada and the improved supply of domestic energy due to high water levels in reservoirs.

Net exports for 1992 were 24.4 terawatt hours.

Table 13
Canadian Electricity Supply and Disposition
Terawatt Hours

	1991	1992(a)	Per cent Change
Production	489.2	504.0	3.0%
Imports	1.7	1.8	5.9%
Total Supply	490.9	505.8	3.0%
Domestic Use	471.1	479.6	1.8%
Exports	19.8	26.2	32.3%
Total Disposition	490.9	505.8	3.0%

(a) Estimate

Source: Energy Overview Appendix

Figure 14
International and Interprovincial Transfers of Electricity
(Gigawatt Hours)

Data for interprovincial transfers of electricity are from 1 November 1991 to 31 October 1992 and are compiled from "Statistics Canada Electric Power Statistics Monthly."

Data for United States imports and exports are for 1992 (includes exchanges).





Natural Gas

Hearings, Inquiries and Reviews

During 1992 the Board conducted three hearings and one review on natural gas exports.

The Board issued 89 short-term orders either for the export, import or transit movement of natural gas in 1992. It also issued 28 new licences.

The Board monitored compliance with the terms and conditions of extant gas export licences, collected and published monthly data on export prices, sales and associated transportation costs.

North Canadian Oils, Poco — GH-7-90

On 23 April, the Board issued Reasons for Decision on two previously approved licences for **Poco Petroleum Ltd.** to export a total 1 million cubic metres (35 million cubic feet) per day of gas through Huntingdon, British Columbia. The decision had been issued in December of 1991 without attendant Reasons. The Board also denied a licence application by **North Canadian Oils Limited** for exports of 198 000 cubic metres (7 million cubic feet) of gas per day through Emerson, Manitoba over a 15-year period. **North Canadian** advised the Board that it had a change in supply arrangements but did not file a copy of this information with the Board. As a result the Board found that the company's original evidence was no longer valid and that it could not issue a licence. A public hearing was held in Vancouver.

Esso, Gulf, Shell — Environmental Screening — GHW-2-90

The Board announced on 22 July that an environmental screening by the Board found there are no potentially adverse environmental effects associated with previously-approved licences for the

export of gas from the Mackenzie Delta to the United States. **Esso Resources Canada Limited**, **Gulf Canada Resources Limited** and **Shell Canada Limited** had already been authorized to export 260 billion cubic metres (9.1 trillion cubic feet) over a 20-year period, beginning in 1996. A written proceeding was held by the Board.

WGML, Unigas, Mobil — GH-3-91 (Volume 1)

Eight licences were issued on 23 March for exports totalling 9.1 million cubic metres (321 million cubic feet) of gas per day for periods of 4.5 to 10 years through various export points. Six licences were issued to **Western Gas Marketing Limited** and one each to **Unigas Corporation** and **Mobil Oil Canada Ltd.** A public hearing was held in Calgary.

Amoco, CanOxy, ProGas, Shell — GH-3-91 (Volume 2)

Six licences were issued on 30 March for exports totalling two million cubic metres (72 million cubic feet) per day through various export points and for periods from 10 to 15 years. Applicants were **Amoco Canada Petroleum Company Ltd.**, and **Canadian Occidental Petroleum Ltd.**, while **ProGas Limited** and **Shell Canada Limited** each made two applications.

Canadian Petroleum Association Review — GH-R-1-91 (Review of Board Decision GH-5-88, Alberta and Southern Gas Co. Ltd. Licence GL-111, May, 1989)

The Board announced on 24 June that an order was issued to preclude exports through Kingsgate and Huntingdon, B.C. for use in the Northern California market, unless those volumes are moving under contract by **Alberta**

and **Southern Gas Co. Ltd. (A&S)** for sale to **Pacific Gas Transmission Company**. At the same time, another order suspended interruptible transportation service to Kingsgate and also suspended the assignment provisions of the Gas Transportation Service document held by **Alberta Natural Gas Company Ltd.** The orders had the effect of preventing the displacement of long-term gas supply of **A&S** and its producers to Northern California. A public hearing was held in Calgary.

Market Based Procedure — GHW-1-91

On 23 June, the Board updated the public hearings component of the Market-Based Procedure (MBP) used in assessing licence applications for long-term natural gas exports. The Board clarified the complaints procedure, made minor changes to “other public interest considerations” and implemented changes to the prehearing process to streamline hearings. The MBP, originally issued in July 1987, establishes a three-part public hearing process:

- ▲ complaints procedure;
- ▲ export impact assessment; and,
- ▲ other public interest considerations.

The MBP also has a monitoring component. This is discharged by the Board’s Natural Gas Market Assessments and the long-term outlook for Canadian energy supply and demand. The reassessment of the MBP took place in response to questions about the intent and operation of the complaints procedure and requests for clarification of the other public interest considerations.

AG-Energy, et al — GH-1-92 (Volume 1)

On 6 August, seven licences were issued and one existing licence was transferred authorizing exports of 7.8 million cubic metres (277 million cubic

feet) of gas per day for periods of 10 to 17 years. Applicants were **AG-Energy, L.P.**, **Canadian Hydrocarbons Marketing Inc.**, **Canadian-Montana Pipe Line Company**, **Husky Oil Operations Ltd.**, **Petro-Canada**, **TransCanada PipeLines Limited** and **Esso Resources Canada Limited/Esso Resources Canada** jointly with **Transco Energy Marketing Company** and **CanStates Gas Marketing**. A public hearing was held in Calgary.

CanWest, et al — GH-1-92 (Volume 2)

On 19 November, the Board issued one licence each to **CanWest Gas Supply Inc.**, **Encogen Northwest, L.P.**, **Kamine Natural Dam Cogen Co. Inc.**, **New York State Electric & Gas Corporation** and three licences to **Selkirk Cogen Partners II, L.P.** to be held jointly with **ATCOR Ltd.**, **Imperial Oil Resources Limited** and **PanCanadian Petroleum Limited**. In total, these licences authorized export of 5 million cubic metres (178 million cubic feet) per day of natural gas for periods of 12 to 15 years.

FSC Resources, et al — GH-5-92

On 4 December, the Board rendered its decision on an application by **FSC Resources**, **Saranac Power Partners, L.P.** and **Shell Canada Limited** to transfer **FSC’s** existing gas export licence to **Saranac** and **Shell**, or alternatively, to issue a new licence to the two companies. The Board recommended to Governor in Council that a new licence be issued to **Saranac** and **Shell** and that existing licence GL-138 be revoked. Applicants were authorized to export 1.45 million cubic metres (51 million cubic feet) of gas per day at Napierville, Quebec for 15 years. Decisions will be issued early in 1993 on six other export applications also considered in this

hearing. Applications totalling 7.7 million cubic metres (270 million cubic feet) of gas per day for terms of 4.3 to 17 years were made by **BP Resources Canada Limited**, **Kamine Beaver Falls Cogen Co. Inc.**, as managing general partner of **Kamine/Besicorp Beaver Falls L.P.**, **Kamine Syracuse Cogen Inc.**, as managing general partner of **Kamine/Besicorp Syracuse L.P.**, and **Western Gas Marketing Limited**. A public hearing was held in Calgary.

ENCO, et al — GH-6-92

A hearing was held in Calgary in November concerning 11 applications to export 9.6 million cubic metres of gas (340 million cubic feet) per day via Kingsgate, British Columbia, and by **ENCO Gas, Ltd.** to export up to 601 300 cubic metres (21 million cubic feet) of gas per day for 15.5 years via Huntingdon, British Columbia. Exports through Kingsgate, for terms of seven to 15 years, were sought by **Poco Petroleum Ltd.**, **Summit Resources Limited**, and by **Southern California Edison Company** jointly with **AEC Oil and Gas Company**, a division of **Alberta Energy Company Ltd.**, **Imperial Oil Limited**, **Shell Canada Limited** and **Western Gas Marketing Limited**, as well as by **San Diego Gas & Electric Company** jointly with **Bow Valley Industries Ltd.**, **Canadian Hunter Marketing Ltd.**, **Husky Oil Operations Ltd.** and **Summit Resources Limited** and by **Grand Valley Gas Company** as agent for **Washington Water Power Company**. A decision was pending at the end of 1992.

Canadian Hydrocarbons Marketing Inc., et al — GH-7-92

On 8 December the Board announced that it had set down for public hearing applications from seven

companies for licences to export natural gas. **Canadian Hydrocarbons Marketing Inc.** is requesting a four year licence to export through Huntingdon, British Columbia, some 136 400 cubic metres (4.8 million cubic feet) of gas per day. **CanStates Gas Marketing** is requesting a 15 year licence to export through Iroquois, Ontario, some 1 261 400 cubic metres (44.5 million cubic feet) of gas per day. **CanWest Gas Supply Inc.** is requesting a 12 year licence to export through Huntingdon, British Columbia, some 273 200 cubic metres (9.6 million cubic feet) of gas per day. **Enron Gas Marketing Inc.** is requesting a 12 year licence to export through Chippawa, Ontario, some 805 000 cubic metres (28.4 million cubic feet) of gas per day. **New York State Electric & Gas Corporation** (“NTSEG”) is requesting a 10 year licence to export through Chippawa, Ontario, some 283 300 cubic metres (10 million cubic feet) of gas per day. **UniGas Corporation** requested, in a joint application with **The City of Burbank**, **The City of Glendale** and **The City of Pasadena** of California, three six year licences to export through Kingsgate, British Columbia, 367 300 cubic metres (13 million cubic feet) of gas per day. **UniGas Corporation**, in another application, requested a six year licence to export through Kingsgate, British Columbia, 396 600 (14 million cubic feet) of gas per day. A public hearing is to be held in Calgary, beginning 22 February 1993.

Other Activities

Natural Gas Studies

In August, the Board issued a report entitled **Natural Gas Market Assessment: Long-Term Canadian Natural Gas Contracts**, as part of its monitoring of Canadian energy markets.

The report provides a comprehensive study of changes to contracting practices in the long-term market for domestic and export gas sales during the 1985-91 period.

On 3 September, the Board released a draft of the **Export Impact Assessment (EIA)**, which analyzes the impact of significantly higher gas exports on Canadian demand, supply and prices over the next 20 years. Export Impact Assessments are part of the public hearing component of the Market-Based Procedure. The Board has invited interested parties to comment on specifics of the EIA analysis and will address related issues with participants at a workshop in 1993.

Oil

In 1992 the Board issued 105 orders for the export of crude oil and petroleum products. The Board monitors and receives monthly data from the industry on export volumes and prices for crude oil and petroleum products. The statistics are compiled and analyzed, and consolidated reports are issued to the industry and other interested parties on a monthly basis.

Propane and Butanes

During 1992 the Board issued 50 orders for the export of propane and 44 orders for the export of butanes. As a condition of the orders, companies submit monthly data to the Board on the actual exports, including prices and volumes. In addition, companies provide information on their supply and the disposition of these products. The data are analyzed and aggregated reports are provided to the industry and other interested parties.

Ethane

For purposes of export regulation, ethane is treated the same as natural gas. In 1992 there were no orders issued to export ethane.

Electricity

During 1992, the Board issued 13 export permits and amended the conditions of seven licences and two power line certificates. One permit for an international power line was issued.

The Board monitored exports to ensure compliance with the conditions contained in previously approved permits, licences and orders. As part of its monitoring function, the Board receives data on export volumes and revenues from each exporter and compiles these into a monthly report which is issued to exporting utilities, government departments and other interested parties. The monthly report also includes data, received from the electric utilities and Statistics Canada, on import volumes and costs.

Exports

Manitoba Hydro — EW-1-91

The Board issued three permits for firm power as a diversity exchange (exported during summer season to be returned in winter season) to the **Manitoba Hydro-Electric Board** on 5 October allowing export of a total 500 megawatts and 2 209 gigawatt hours to **Northern States Power Company (NSP)** and **United Power Association** for periods of 20 to 24 years. A two year NSP contract for 1993 and 1994 was also approved.

BC Hydro — EW-2-91

The Board issued four permits on 29 December to the **British Columbia Hydro and Power Authority** and the **British Columbia Power Exchange Corporation** for the export of short-term firm and interruptible energy to the **Bonneville Power Administration** and other potential customers. The permits, effective 1 January 1993 to 30 September 1997, replace three licences expiring 31 December 1992.

International Power Lines

BC Hydro — AO-1-EC-III-10

The Board issued an amending order to **British Columbia Hydro and Power Authority's** certificate of public convenience and necessity on 16 April 1992 permitting the inclusion of a phase shifting transformer on the international power line at the Nelway station.

Manitoba Hydro — AO-1-EC-III-16

The Board issued an amending order to **Manitoba Hydro's** certificate of public convenience and necessity on 13 August 1992 permitting the installation of additional terminal facilities on the international power line at the Dorsey station in order to upgrade the power transfer capability of the line.

Roseau Electric Cooperative Inc. — EPE-40

The Board issued a permit to Roseau to extend an existing international power line, in the District of Kenora, Ontario, a distance of approximately 7.4 kilometres.

Inter-utility Trade

The Board issued two discussion papers entitled, **Inter-utility Cooperation and Transmission Access and Wheeling**. The papers outline a

range of options to achieve greater cooperation among utilities. Written responses from electric utilities, independent power producers, regulatory authorities, government departments, associations and interconnected power pools will be used in preparing a report to the Minister of Energy Mines and Resources on steps the federal government might take to promote enhanced trade in electricity among provinces and between Canada and the United States.

Pipeline Facilities

The Board regulates the natural gas, oil and product pipelines of 54 companies. The associated pipeline systems are shown in Figure 1 and Figure 2.

All new pipeline facilities under the NEB's jurisdiction must receive Board authorization prior to construction and operation. Public hearings are held for all new pipelines exceeding 40 kilometres in length, resulting in the issuance of a certificate under the *National Energy Board Act*. On occasion, the Board will conduct a public hearing for other facilities applications if it determines that the public interest would be served. All Certificates and Orders issued during 1992 approving new pipeline facilities are listed in Appendices B (Oil) and C (Gas).

TransCanada Pipelines Facilities — GH-4-91

On May 20 the Board approved proposals by **TransCanada PipeLines Limited** to build various expansion facilities along its natural gas pipeline system from Alberta to Ontario during the 1992-93 construction season. The expansions will allow movement of 4.35 million cubic metres (153 million cubic feet) of gas per day to domestic and U.S. markets. Total cost is estimated at \$357 million. A public hearing was held in Calgary.

Alberta Natural Gas Facilities — GHW-2-91

Alberta Natural Gas Company Ltd. (ANG) received Board approval on 27 May to expand its natural gas pipeline system in Southern British Columbia to serve markets in California and the Pacific Northwest. **ANG** proposed to expand and modify three compressor stations in 1993 which when accompanied by expansion of the adjacent **Foothills** pipeline system will allow increased natural gas shipments of 24.7 million cubic metres (864 million cubic feet) per day. The **ANG** facilities are part of the **Pacific Gas Transmission Company** proposal to increase capacity to California. A written hearing was held by the Board.

Altamont — Review of Decision on Alberta Natural Gas Facilities—GHW-2-91

The Board dismissed an application on 21 September by **Altamont Gas Transmission Canada Limited** and **Altamont Gas Transmission Company** for a review and stay of the Board's May decision approving additional compression on the **Alberta Natural Gas Company Ltd.** natural gas pipeline system in southern British Columbia.

Westcoast Facilities — GH-2-92

Westcoast Energy Inc. received Board approval on 14 May to build its Tommy Lakes Pipeline in British Columbia. The 60-kilometre (36-mile) project is a gathering line that will tie in new production to the **Westcoast** line at Fort St. John, British Columbia. A public hearing was held in Fort St. John.

Westcoast Facilities — GH-3-92

On 30 July, the Board approved **Westcoast Energy Inc.**'s plans for looping facilities on its southern natural gas main line to Huntingdon, British Columbia,

following a public hearing in Calgary. The added facilities increased capacity on the line by 5.4 per cent or 2 465 000 cubic metres (87 million cubic feet) per day as of 1 November.

TransCanada Pipelines Facilities — GH-4-92

The Board announced approval on 12 November of an application by **TransCanada PipeLines Limited** to build \$501 million worth of new facilities during 1993-94. Approval covers 366 kilometres of new pipeline loop and 42.8 megawatts of new compression capacity, allowing **TransCanada** to provide 6.061 million cubic metres (212 million cubic feet) per day of firm service. Some 2.548 million cubic metres (90 million cubic feet) of capacity would service domestic requirements and the remainder would serve export demand. A public hearing was held in Calgary.

TransCanada PipeLines Blackhorse — GH-R-1-92

In a review of a previous denial of the project, **TransCanada PipeLines Limited** received Board approval 29 June to build its Blackhorse extension, in light of new facts and changed circumstances. A 20.6-kilometre (12.8-mile) line would be built from the Blackhorse metering station near Thorold, Ontario, to an export point near Chippawa, Ontario, where it would interconnect with the Empire State Pipeline for natural gas. The Blackhorse application was approved after United States regulators rejected expansion on an alternative route. The Board also found that gas buyers were seeking a new supply alternative and that disallowing Blackhorse could put contracted and potential sales of Canadian gas at risk. A public hearing was held in Niagara Falls, Ontario and Calgary.

Altamont Canada — GHW-1-92

The Board held a written hearing in 1992 on a preliminary question of jurisdiction respecting an application by **Altamont Gas Transmission Canada Limited** to construct a 300 metre long international gas transmission pipeline in Southern Alberta. The proposed pipeline would connect upstream with a proposed 217 kilometre long pipeline to be owned and operated by **NOVA Corporation of Alberta**, leading from the area of Princess, Alberta. The line would allow movement of gas to the proposed **Altamont Gas Transmission Company** line, planned to move Canadian gas to the existing **Kern River Gas Transmission Company** pipeline for access to California. The preliminary question explores whether the **Altamont Canada** and **NOVA** pipelines, taken together, form one system connecting the Province of Alberta to the United States, subject to federal jurisdiction. A decision will be issued in 1993.

Huntingdon International Pipeline Company Facilities

The Board approved on 11 June an application by **Huntingdon International Pipeline Corporation** to build two parallel natural gas lines totalling some 160 metres, within the boundaries of the **B.C. Gas** compressor

station site at Huntingdon, British Columbia, for the purposes of importing and exporting natural gas. The lines cross the international boundary and are designed to carry up to 9.9 million cubic metres (350 million cubic feet) of gas per day.

Other Activities

Proposed amendments to the *Onshore Pipeline Regulations* will be released to industry for comment in 1993. The amendments will reflect discussions between the Board and the Canadian pipeline industry concerning a 1985 pipeline accident on the **Interprovincial Pipe Line** system near Camrose, Alberta. In addition, the proposed amendments will include references to the revised editions of the Canadian Standards Association pipeline standards.

In addition to its program of construction surveillance and facilities inspections in 1992, the Board conducted detailed audits of two Group I companies and nine Group II companies for compliance with safety requirements of the *Onshore Pipeline Regulations*.

Pipeline Incidents

During 1992 the Board carried out a number of pipeline incident field investigations to monitor the implemen-

Table 14
Causes of Pipeline Incidents 1988 – 1992

	1988	1989	1990	1991	1992
Defective Welds	3	5	0	3	1
Material Failure	7	12	12	16	18
Third Party Damage	6	2	5	9	5
Corrosion	4	3	1	2	4
Other (a)	18	26	29	19	15
Total	38	48	47	49	43

(a) Includes workplace and construction accidents, operator errors, earth movements, etc.

tation of company emergency, safety, and environmental protection procedures.

Table 14 identifies the causes of pipeline incidents occurring during the last five years.

In addition to the 43 incidents (which included 1 fatality in a construction accident) reported in Table 14, there were 25 lost time incidents and 324 minor workplace injuries to pipeline company or contractor employees and 14 minor toxic fluid spills were reported during 1992.

There were no injuries or fatalities caused to members of the Canadian public as a result of NEB-regulated pipeline operations in 1992.

Public Inquiry on Stress Corrosion Cracking

In December 1992, the Board announced it would conduct a written public inquiry in early 1993 concerning the occurrence of stress corrosion cracking (SCC) on Canadian pipelines. The inquiry followed from recommendations issued by the Transportation Safety Board (TSB) regarding two recent line breaks on the **TransCanada PipeLines Limited** system. The recommendations are:

- ▲ the Board ensure that the internal pressure in all federally regulated natural gas pipelines, where stress corrosion cracks have been found or are likely to exist, is below the threshold level for the origin or propagation of stress corrosion cracking;
- ▲ the Board, in collaboration with industry, develop improved methods for detecting and specific directions for repairing stress corrosion cracks; and
- ▲ the Board, in collaboration with provincial authorities and in consultation with industry, develop a set of

operating restrictions to be applied industry-wide where stress corrosion cracking is suspected to exist in natural gas pipelines.

As a result of three earlier breaks which occurred in 1985 and 1986, **TransCanada** implemented a Pipeline Maintenance Program to investigate and study possible solutions to the SCC problem. Since 1985, the Board has been actively involved in monitoring and inspecting the company's progress and has approved the expenditures related to the Pipeline Maintenance Program.

Under the *Canadian Transportation Accident and Safety Board Act*, the TSB takes precedence over the National Energy Board with respect to the investigation of causes and factors contributing to pipeline operation incidents. The TSB and the Board are in the process of drafting a memorandum of understanding concerning their respective roles in future incident investigations.

Third Party Crossing Matters

In the course of 1992, the Board received five third-party crossing applications for the crossing of a pipeline or construction on a right-of-way without the pipeline owner's permission. Under the *National Energy Board Pipeline Crossing Regulations*, Parts I and II, two of these applications were approved, two were denied, and one was withdrawn.

The Board continued to monitor compliance with the regulations and encourage safe construction and excavation practices near pipelines through the investigation of violations, random field inspections, and the audit of pipeline company crossing records. Public awareness was promoted through meetings with utilities, excavators, agencies and pipeline companies. A revised version of *Excavation and Construction Near Pipelines*

was published in March 1992 to assist those involved in third-party activities affecting Board regulated pipelines.

Northern Pipeline Agency

In 1992 the Board provided technical advice to the Northern Pipeline Agency respecting facility additions by **Foothills Pipe Lines Ltd.**, which holds certificates of public convenience and necessity for the construction of the Canadian portion of the **Alaska Natural Gas Transportation System**. This advice was provided in conjunction with the construction of two new compressor stations within Alberta on **Foothills'** eastern delivery leg. A design change to the certificate for the western delivery leg was approved, thereby allowing the addition of 78 kilometres of line pipe in southern British Columbia for increased exports into California and the Pacific Northwest. An application was also received for the installation of a previously certificated compressor unit on the eastern delivery leg in Saskatchewan.

New Pipeline Construction

In addition to the major construction projects approved as a result of public hearings, the Board also issued 82 Orders for the construction of new pipeline facilities totalling \$530 million. Included were projects such as:

- ▲ **Murphy Oil Company Ltd.** completed a 17-kilometre loop extending from the Milk River pump station to the U.S. border near Coutts, Alberta.
- ▲ **Trans Mountain Pipe Line Company Ltd.** modified facilities to allow transportation of methyl tertiary butyl ether (MTBE) from Edmonton, Alberta to Burnaby, British Columbia.
- ▲ **Trans-Northern Pipeline Inc.** relocated a section of pipeline to the outside of a shopping centre in St. Eustache, Quebec.
- ▲ **Dome Kerrobert Pipeline Ltd. and Pan Canadian Kerrobert Ltd.** installed a new pump station at Laporte, Saskatchewan.
- ▲ **Many Islands Pipe Line (Canada) Limited** built 5.9 kilometres of pipeline to provide fuel gas to the BiProvincial Upgrader near Lloydminster, Saskatchewan.
- ▲ **Interprovincial Pipe Line Ltd.** installed new tankage at Cromer, Manitoba to accommodate segregated condensate stream from Caroline, Alberta.

Pipeline construction in 1992 included **TransCanada PipeLines Limited** addition to its system of 894 kilometres of pipeline and twenty compressor units totalling 296 megawatts of power.

On 6 July 1992, **Interprovincial Pipe Line Company** reactivated the Montreal Extension due to new nominations for Montreal delivery service by the **Alberta Petroleum Marketing Commission**. The line had been deactivated in 1991.

Two new pipelines came under the Board's jurisdiction in 1992. **Petrorep (Canada) Ltd.** received approval to construct a 13.5-kilometre sour gas line between Boundary Lake, British Columbia and the Chauvco gas processing plant in Alberta. The **Huntingdon International Pipeline Corporation** owns an export and import line totalling 160 metres in length crossing the international border near Huntingdon, British Columbia.

Sales, Abandonments and Transfers

In 1992 the Board approved the abandonment of **TransCanada PipeLines Ltd.** Sheridan sales meter station and a portion of Line 200-1 adjacent to the City of Mississauga. Portions of **TransCanada's** Line 200-1 were sold to the **Consumers' Gas Company Ltd.**, **Consumers Gas' (Canada) Ltd.**, **Union Gas Ltd.**, and The Corporation of the City of Mississauga. In addition, a pipeline owned by **Bonanza Oil and Gas Ltd.** was transferred to **Poco Petroleum Ltd.**

Financial Regulation of Pipelines

Section 59 of the *National Energy Board Act* states that "the Board may make orders with respect to all matters relating to traffic, tolls or tariffs." The wide scope of this power is governed by the requirement that "all tolls shall be just and reasonable, and shall always, under substantially similar circumstances and conditions ... be charged equally to all persons at the same rate." Fulfilling these responsibilities is the main objective of the financial regulation activities of the Board.

Currently the Board regulates the natural gas, oil and products pipelines of 54 companies, 31 of which are involved in the transportation of natural gas and 24 in the transportation or storage of oil and petroleum products (**Murphy Oil Company Ltd.** has both gas and oil pipelines, leaving a total of 54 regulated companies).

For regulatory purposes, pipelines are segregated into two groups. The 10 gas and oil pipeline companies with extensive systems belong to Group 1, and those with less elaborate systems belong to Group 2. The tolls for

the Group 2 companies are normally reviewed only upon receipt of a complaint; otherwise the monitoring of these companies consists primarily of reviewing their annual financial statements and tariff filings.

The financial and operating performances of the Group 1 companies are closely monitored by the Board. The Board has reduced the degree of financial regulation of three Group 1 pipeline companies, namely **Alberta Natural Gas Company Ltd.**, **Interprovincial Pipe Line (NW) Ltd.** and **Cochin Pipe Lines Ltd.** Now their tolls, tariffs and amendments are mainly reviewed on a complaint basis.

Hearings, Inquiries and Reviews

Interprovincial Pipe Line — 1992 Tolls Application — RH-2-91

The Board announced on 19 June that it would grant **Interprovincial Pipe Line Inc.** a rate of return on common equity of 12.5 per cent on a deemed equity ratio of 45 per cent excluding deferred taxes. **Interprovincial** had requested a rate of return of 13.5 per cent on a deemed equity ratio of 42.5 per cent including deferred taxes. The Board also ruled that a stand-alone toll design is appropriate for 1992 for both the company's mainline and for the possible reversal of the Sarnia to Montreal extension if flow is reversed in an east to west direction. A public hearing was held in Calgary and Toronto.

Interprovincial Pipe Line — 1992 Tolls Order — TO-4-92

Interprovincial Pipe Line Inc. received Board approval on 30 June to use its existing toll structure for the reopening of its Sarnia-to-Montreal oil pipeline, known as the Montreal

Extension. The line was reactivated on 6 July to fill a nomination from the Alberta Petroleum Marketing Commission for crude delivery to Montreal.

**Trans Mountain — 1992 Tolls
Application — RH-3-91**

In a decision on 23 June, tolls on the **Trans Mountain Pipe Line Company Ltd.** oil pipeline system were reduced by 2.7 per cent for 1992 from rates charged in 1991. **Trans Mountain** had requested an increase of about five per cent. The **Trans Mountain** system runs from Edmonton to Vancouver. A public hearing was held in Vancouver and Calgary.

**TransCanada PipeLines — 1992 Tolls
Application — RH-4-91**

The Board announced approval on 30 April of a rate of return for **TransCanada PipeLines Limited** natural gas transportation service to the Canadian and U.S. markets of 13.25 per cent, effective on 1 April 1992. **TransCanada** convened a joint industry task force prior to making its application and no party at the Board's public hearing in Calgary in February opposed the proposed rate of return.

On 2 June 1992, **TransGas Limited** filed an application for review of the Board's Decision **RH-4-91** regarding **TransCanada's** tolls for 1992. On 5 November 1992, the Board decided that **TransGas** should be provided with relief because the manner in which the surplus interim revenue was refunded led to tolls that are not just and reasonable.

**Westcoast — 1992 Tolls Application —
RH-1-92**

On 27 August 1992, the Board approved an increase of 2.5 per cent in tolls charged by **Westcoast Energy Inc.**

during 1992 on its natural gas pipeline system. **Westcoast** had sought a six per cent increase and was granted an interim increase of five per cent, pending the decision. A rate of return on common equity of 12.5 per cent for 1992 was approved by the Board. The company was ordered to refund any excess revenues to customers. A public hearing was held in Vancouver and Calgary.

**Trans Québec & Maritimes — 1992 Tolls
Application — RH-4-92**

The Board announced on 30 December that it had approved new tolls for **Trans Québec & Maritimes Pipeline Inc. (TQM)** effective 1 January 1993. The Board granted a rate of return on equity of 12.25 per cent for both 1993 and 1994. **TQM** had requested a decrease in its rate of return on equity from the approved 1992 level of 13.75 to 13.125 per cent and to 13.25 per cent for 1993 and 1994, respectively. The Board's adjustments reduced **TQM's** requested monthly tolls by \$114 000 for 1993 to \$6.058 million, and by \$132 000 to \$5.926 million for 1994. A public hearing was held in Montreal.

**Alberta Natural Gas — 1992 Tolls
Application — RHW-1-92**

Tolls on the **Alberta Natural Gas Company Ltd.** natural gas pipeline system in southern British Columbia were reduced 3.9 per cent and the rate of return on common equity was set at 12 per cent in a Board decision announced on 27 October. The Board set the rate effective from 7 February. A written hearing was held by the Board.

**Trans-Northern Pipelines — 1993 Interim
Tolls Order — TOI-4-92**

The Board announced on 30 December that it would grant an interim

tolls request from **Trans-Northern Pipelines Inc.**, keeping its existing tolls in effect as of 1 January 1993. **Trans-Northern** filed an application for a 5.9 per cent toll increase for 1993, based on a rate of return on equity of 12.5 per cent instead of its currently approved 13.75 per cent. The company requested that the Board hold the application in abeyance pending discussions with interested parties to the application.

Trans Mountain Pipe Line — 1993 Interim Tolls Order — TOI-5-92

An amended application from **Trans Mountain Pipe Lines Company Ltd.** for a toll increase of 7.5 per cent for 1993 was received by the Board on 30 December. **Trans Mountain** advised the Board of its intention to file an amended application which would reflect a planned project to transport refined products to Burnaby, British Columbia. The Board granted an interim toll increase of 7.5 per cent as requested by the company pending a revised schedule for processing the application.

In October, the Board stayed an application for 1993 tolls by **Trans Mountain** until information concerning the impact of refined petroleum products facilities is incorporated into the application. An amended application reflecting the project in Burnaby, British Columbia, was filed on 1 December 1992.

Incentive Regulation Workshop

On 23 March, the Board announced its intention to examine potential incentive rate regulation schemes for federally regulated pipelines. The purpose was to initiate public discussion of possible and practical alternatives or modifications to the traditional cost-of-service method of regulation. A three-day workshop was scheduled for

January 1993, with proceedings to be published thereafter. No decision will flow from this process. However, the concepts discussed could be combined and tailored to the circumstances of individual pipelines and could be used in subsequent toll hearings.

Other Activities

The Board considered several applications and requests that did not require public hearings. The items described are the main ones in that category for 1992.

On 30 January 1991, **Centra Transmission Holdings Ltd.** (formerly ICG Transmission Holdings Ltd.) filed a new tariff for a toll increase effective on 15 February 1991. On 29 April 1991, the Corporation of the Town of Fort Frances, Ontario filed a complaint with the Board in which it asked that the toll increase be suspended. On 1 October 1992, the Board dismissed the town's complaint and found that **Centra's** proposed tolls for 1991 and 1992 are just and reasonable and issued a final toll order.

In a letter dated 30 March 1992, the Board advised **Foothills Pipe Lines Limited** that it was considering the need for a review of its allowed return on common equity. By application dated 16 November 1992, **Foothills**, the Canadian Association of Petroleum Producers and the Alberta Petroleum Marketing Commission filed a joint settlement requesting a reduction in the rate of return on common equity, the adoption of flow-through tax methodology for 1992 and the continued collection of the "special charge" until 1 November 2000, provided that the applied-for rate of amortization and the applied-for return on common equity be reviewed by the Board. The Board approved the settlement on 26 November 1992.

Task Forces

In recent years a number of Group 1 pipeline companies have established joint industry task forces on tolls, tariffs and operating matters. These task forces provide a forum for parties to exchange information and discuss and possibly resolve issues before applications are filed with the Board. Currently five pipeline companies have set up task forces - **Westcoast, TransCanada, Trans Mountain, Foothills and Interprovincial**. The Board believes that task forces provide an effective means of

allowing companies and parties to resolve issues on an informal basis, thereby reducing the number of issues to be litigated in hearings, hearing time and costs to all parties.

Financial Information

The 1992 financial information for the Group 1 companies may be found in the Financial Regulation Appendices. Tables 15 and 16 provide a summary of the rates of return on common equity for Group 1 and Group 2 companies.

Table 15
Group 1 Oil Pipelines

Rate of Return on Common Equity, 1992

	Common Equity Percentage	Per cent Return	
		Authorized	Actual
Cochin	N/A	N/A	28.16(a)
IPL	41	12.50	14.40
IPL(NW)	33	16.00	16.00
Trans Mountain	48	12.50	15.90
Trans-Northern	56	13.75	13.44

(a) Before interest and taxes

Source: Financial Regulation Appendix

Table 16
Group 1 Gas Pipelines

Rate of Return on Common Equity, 1992

	Common Equity Percentage	Per cent Return	
		Authorized	Actual
ANG	31	N/A	12.18
Foothills	39	14.00	14.00
TQM	25	13.75	14.62
TransCanada	30	13.25	13.41
Westcoast	35	12.50	12.62

Source: Financial Regulation Appendix

Figure 15
Oil and Oil Products Pipeline Companies
Regulated by the National Energy Board

1. Aurora Pipe Line Company
2. Cochin Pipe Lines Ltd.
3. Dome Kerrobert Pipeline Ltd. and
Pan Canadian Kerrobert Ltd.
4. Dome NGL Pipeline Ltd.
5. Dome NGL Pipeline Ltd. and
Amoco Canada Petroleum Company Ltd.
6. Esso Resources Canada Limited
7. Husky Border Pipelines Ltd.
8. Interprovincial Pipe Line Inc.
9. Interprovincial Pipe Line (NW) Ltd.
10. Manito Pipelines Ltd.
11. Montreal Pipe Line Limited
12. Mont Resources Limited
13. Murphy Oil Company Ltd.
14. Northwest Transmission
Company Limited
15. Petroleum Transmission Company
16. Pouce Coupe Pipe Line Ltd.
17. Shell Canada Products Limited
18. Sun Pipe Line Company
19. Trans Mountain Pipe Line Company Ltd.
20. Trans-Northern Pipelines Inc.
21. Wascana Pipe Line Ltd.
22. Westspur Pipe Line Company
(1985) Inc.
23. Windsor Storage Facility Joint Venture
24. Yukon Pipelines Limited



Figure 16
Gas Pipeline Companies
Regulated by the National Energy Board

1. Alberta Natural Gas Company Ltd
2. Amerada Hess Canada Ltd.
3. Amoco Canada Petroleum Company Ltd.
(inactive)
4. Amoco Canada Resources Limited
(inactive)
5. Bow Valley Industries Ltd.
6. B.P. Resources Canada Limited
7. Canadian Hunter Exploration Ltd.
8. Canadian-Montana Pipe Line Company
9. Centra Transmission Holdings Inc.
10. Champion Pipe Line Corporation Limited
11. Consumers' Gas (Canada) Limited
12. Foothills Pipe Lines Ltd.
13. Genesis Pipeline Canada Ltd.
14. Huntingdon International Pipeline Corporation
15. Many Islands Pipe Lines (Canada) Limited
16. Mid-Continent Pipelines Limited
17. Minell Pipeline Ltd.
18. Murphy Oil Company Ltd.
19. Niagara Gas Transmission Limited
(a) Ottawa River crossing
(b) St. Lawrence River crossing
20. Novacorp International Pipelines Ltd.
(certified but not built)
21. Peace River Transmission Company Limited
22. Petrorep (Canada) Ltd.
23. POCO Petroleum Ltd.
24. SCL Quebec Pipeline Inc.
25. St. Clair Pipelines Ltd.
26. TransCanada PipeLines Limited
27. Trans Québec and Maritimes Pipeline Inc.
28. Union Gas Limited
29. Westcoast Energy Inc.
- *30. Foothills Dempster Lateral (Corridor)
31. 167496 Canada Ltd.

* = Proposed



Environment

The Board is responsible for all environmental concerns relating to the Board's regulation of oil, gas, petroleum products, pipelines, energy exports, international power lines and frontier oil and gas activities.

Environmental Assessment and Regulation

The Board performed environmental assessments of more than 160 projects and export applications during 1992. Thirty-eight of these were for gas or oil exports. The balance of the assessments were for project applications. Major projects included:

- ▲ **Westcoast Energy Inc.'s** 1992 Southern Mainline Looping, 1992 Capital Projects and Tommy Lakes projects;
- ▲ **TransCanada PipeLines Limited's** 1992/1993 Facilities, 1993/1994 Facilities and the Blackhorse Extension projects;
- ▲ **Interprovincial Pipe Line Inc.'s** regional bioremediation facilities;
- ▲ **Murphy Oil Company Ltd.'s** Milk River pipeline and storage facilities;
- ▲ six Nova Scotia and Newfoundland Offshore Development Fund Projects;
- ▲ Memorandum to Cabinet on draft Northern Accord;
- ▲ **Panarctic Oils Ltd.'s** trucking of Bent Horn oil to Rae Point;
- ▲ **Paramount Resources Ltd.'s** Cameron Hills Oil Development Plan Amendment;
- ▲ six geophysical/geological programs;
- ▲ twenty northern well abandonments and,

- ▲ research and development projects under the Program on Energy Research and Development.

Socio-Economic Considerations

Proponents of federally regulated energy projects are required to propose a socio-economic action plan, including a monitoring system, to deal effectively with impacts. The Board may set socio-economic terms and conditions as part of its approval, and does follow-up work to guarantee compliance.

An example of this process was the cooperation between **Westcoast Energy Inc.** and British Columbia native bands during the planning and construction phases for the Tommy Lakes Pipeline and the Southern B.C. Mainline Looping projects, which received Board approval in 1992. Early and detailed consultation between **Westcoast** and the bands made a significant difference in the identification and realization of native employment and business opportunities. The process also set a positive tone for future project consultation and involvement.

Environmental Surveillance

The Board conducts periodic inspections during pipeline and power line construction under its environmental surveillance program. The program verifies compliance with the corporate environmental protection procedures and Board requirements.

In 1992, the Board conducted a total of 12 environmental inspections on various pipeline construction and post-construction projects involving **TransCanada PipeLines Limited**, **Westcoast Energy Inc.** and **Interprovincial Pipe Line Inc.** Of particular significance were inspections of the recovery of the rights-of-way at two sec-

tions along the **TransCanada** system — the Great Sand Hills (constructed in 1990) and the 1991 Niagara River crossing (installed using a directional drilling technique).

The Board also reviewed 28 post-construction environmental monitoring reports and 35 detailed environmental studies reports during 1992. These reports were submitted by Board-regulated companies in satisfaction of certain project approval requirements.

Operational Programs

A number of inspections were conducted on operational pipeline systems during 1992. These inspections focused on noise emissions associated with the pipeline systems of **Interprovincial Pipe Line Inc.**, **TransCanada PipeLines Limited**, **Trans Mountain Pipe Line Company Ltd.** and **Westcoast Energy Inc.**. The Board and staff collected baseline noise emission data from a number of compressor and pump stations in order to more fully understand the scope of this emerging issue.

An inspection of the **Lasmo Nova Scotia Ltd.** Cohasset/Panuke production facility was conducted for the Canada-Nova Scotia Offshore Petroleum Board. Oceanographic and meteorological measuring and observing programs were evaluated and the weather and sea state prediction program was also examined.

Routine environmental inspections were also carried-out along the **Interprovincial Pipe Line Inc.** right-of-way from Edmonton, Alberta to Gretna, Manitoba and along the **TransCanada PipeLines Limited** right-of-way near the Jock River in Ontario.

Emergency Response

The Board, under the authority of the *Canada Oil and Gas Operations Act*, is responsible for taking such action as may be necessary to repair or remedy any condition resulting from a spill, to reduce or mitigate any danger to life, health, property or environment resulting from a spill, and where necessary, to assume management and control of operations giving rise to waste or where a spill or debris has occurred. In fulfilling this role, the Board works to maintain and enhance the ability to respond to emergencies on federal lands. In 1992, directorate staff:

- ▲ participated in a Department of Fisheries and Oceans workshop to develop an acceptable communications plan for emergency situations;
- ▲ worked with Emergency Preparedness Canada to develop a consistent approach for response to emergency situations; and,
- ▲ worked with Indian and Northern Affairs Canada to review applicable liability limits for northern drilling.

Regulatory Initiatives

Much of Canada's federal and provincial environmental legislation is under revision. Specific legislative change initiatives in which Board staff participated in 1992 included:

- ▲ *Canadian Environmental Assessment Act* and regulations;
- ▲ *Northern Inland Waters Act*; and
- ▲ regulations respecting the *Northwest Territories Waters Act* and the *Yukon Waters Act*.

Board environmental staff also participated in two initiatives to develop pipeline water crossing guidelines in Ontario and oil and gas industry environmental operating guidelines in British Columbia.

Environmental Research and Development

Program on Energy Research and Development — Oil, Gas and Electricity

The Board manages, fulfils the role of secretariat and participates in the committee 6A (Engineering, Geoscience, Foundations and Loads) research program. The Board had an allocation of \$1.3 million in funding in 1992 for a variety of research and development initiatives. Specific programs include:

- ▲ field testing of iceberg impact loading to determine design criteria for fixed and floating structures for off-shore Newfoundland;
- ▲ pressure-ridge ice-scour experiments to assess risks of ice scouring to off-shore pipelines;
- ▲ investigation of methods to improve fast rescue craft capabilities for off-shore; and
- ▲ investigation of primary spreading of oil in broken ice.

The Board also participates in committee 6B (Environment) and committee 6C (Transportation) by undertaking and promoting research that enhances the safety of personnel, improves environmental protection for offshore oil and gas operations and improved pipeline reliability.

Environmental Studies Research Funds

The Environmental Studies Research Funds (ESRF) is a research program which sponsors environmental and social studies. It is designed to assist government decision making related to oil and gas exploration and development on

Canada's frontier lands. The ESRF program, initiated in 1983, receives its legislated mandate through the *Canada Petroleum Resources Act* (CPRA), which was proclaimed in February, 1987.

Funding for the ESRF is provided through levies on frontier lands paid by interest holders such as the oil and gas companies. The ESRF is directed by a joint government/industry management board chaired by the director general of the environment directorate and is administered by a small secretariat within the directorate. The ESRF is currently funding 20 studies valued at about \$1.5 million. Six new studies will be funded from the \$991 000 1992 budget. The new studies are:

- ▲ Environmental Sensitivity Resource Mapping — west coast Newfoundland which will collate existing data for generating computer-based maps;
- ▲ Beluga Whale Telemetry Field Program which documents the position, dive profile and behaviour of live captured and released belugas in the Southern Beaufort through the use of satellite tracking and aircraft/marine vessel ground tracking;
- ▲ Mackenzie Delta Permafrost/Geology Transect Study;
- ▲ Remote Sensing Ice Detection Capabilities on the east coast;
- ▲ Environmental Loading Studies to resolve issues related to combined environmental loading as defined in the new CSA offshore platform code; and,
- ▲ Bibliography on Oil Pollution Fate and Effects in aquatic systems.

The Board has responsibilities for frontier lands, excluding areas offshore Newfoundland and Nova Scotia subject to federal-provincial Accords. The Board's authority encompasses regulation of, exploration for and exploitation of oil and gas in a manner that promotes safety of the worker, protection of the environment, and the conservation of oil and gas resources. The decision-making authority related to these responsibilities is currently exercised by the Minister of Energy, Mines and Resources for activities south of 60° and the Minister of Indian and Northern Affairs for activities north of 60° (see Figure 17). In order for the Board to exercise this authority, the legislation — the *Canada Oil and Gas Operations Act*, the *Canada Petroleum Resources Act* and the *National Energy Board Act* — needs to be amended.

Exploration and drilling on frontier lands were down markedly from previous years, with only four wells drilled, of which two were north of 60°. The other two wells were development wells drilled offshore Nova Scotia as part of the Cohasset/Panuke project. Geophysical operations were also at a low level overall, with an increase in the proportion of three-dimensional seismic programs. The production activity on frontier lands continued at a steady pace north of 60°, with activity at Norman Wells, Pointed Mountain, Cameron Hills, Kotaneelee, and Bent Horn (see Figure 18).

Exploration

North

There was no exploration activity in the Beaufort Sea. In the Mackenzie Delta, an exploratory well, **Shell Canada Limited** Shavilig J-20, was drilled on a structure south of the 1990 Unipkat discovery. **Shell** Unipkat B-12, drilled to delineate the 1990 Unipkat discovery,

was suspended without testing. In addition to the drilling activity, three seismic programs were conducted. **Shell** undertook a partial three-dimensional seismic program over 1991 exploration licenses, and **Imperial Oil Resources Limited** completed two programs of two-dimensional seismic on the Tuktoyaktuk Peninsula.

In addition to these drilling programs, the Geological Survey of Canada completed geotechnical boreholes at three existing wellsites (Unipkat B-12, Taglu D-43 and Kumak E-58) to determine the extent and properties of the permafrost at the sites.






Resource Evaluation

Existing discoveries in the mainland Northwest Territories and Yukon were reviewed and results of two new wells and seismic programs were evaluated and incorporated in resource calculations. The inventories of resources under the jurisdiction of offshore petroleum boards were also monitored to develop a comprehensive picture of Canadian frontier supply.

Technical evaluations on several matters related to rights management were performed for the Northern Oil and Gas Directorate of the Department of Indian and Northern Affairs Canada. These included: recommendations on the existence and areal extent of two significant discoveries in the Beaufort Sea; review of existing significant discoveries in light of additional drilling; review of field boundaries at Kotaneelee and Norman Wells; and determination of allowable expenditures for seismic operations.

Recommendations on areas of future calls for nominations were made to the Northern Oil and Gas Directorate. Materials were also prepared for a general

Figure 17
Canada's Frontier Lands

-  Area under the responsibility of the Minister of Indian and Northern Affairs Canada (Regulated by the National Energy Board)
-  Area under the responsibility of the Minister of Energy, Mines and Resources (Regulated by the National Energy Board)
-  Managed by the Canada-Newfoundland Offshore Petroleum Board
-  Managed by the Canada-Nova Scotia Offshore Petroleum Board
-  Line of Administrative Convenience



prospectus on northern basins. Staff collaborated with the Geological Survey of Canada on preparatory studies for a petroleum assessment of the Mackenzie Corridor and the Western Canada Gas Assessment.

Conservation, Development and Operations

Mainland Territories

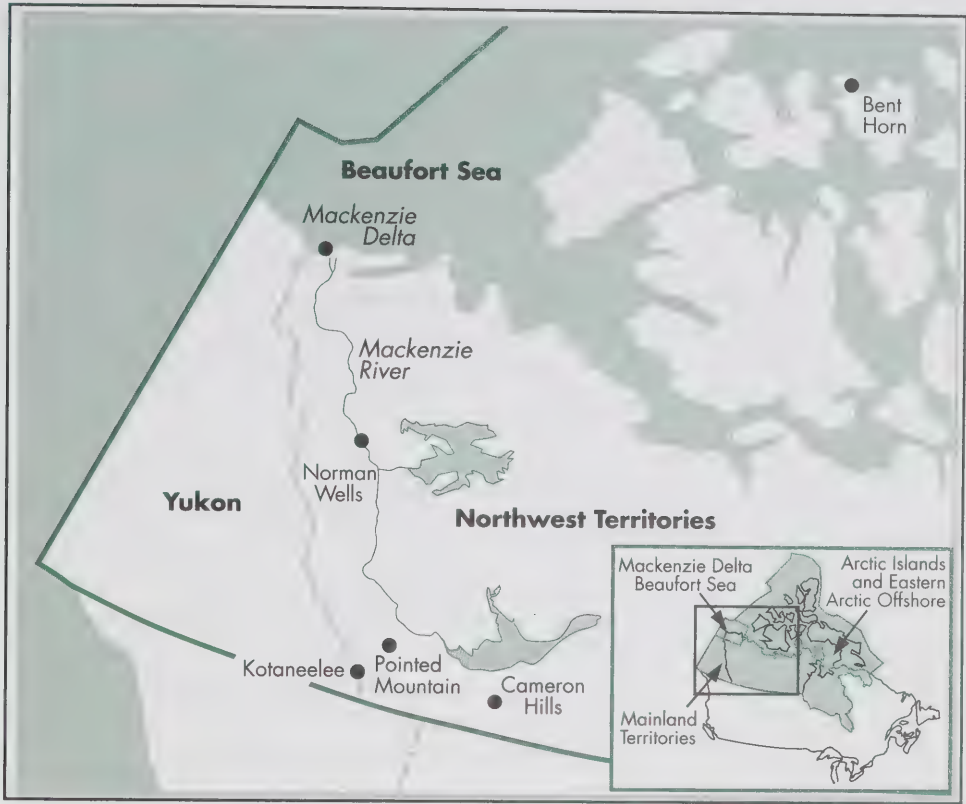
Norman Wells

Oil production from the Norman Wells, Northwest Territories oil field in 1992 was 1.85 million cubic metres (11.64 million barrels), a decrease from 1.89 million cubic metres (11.9 mil-

lion barrels) from the 1991 volume. As of 31 December 1992 the cumulative oil production was 17.7 million cubic metres (111.3 million barrels). At year end there were 165 production wells and 166 injection wells. As part of its field development program, **Imperial Oil Resources Limited** undertook a three-dimensional seismic survey of the eastern third of the field. This information will be used to finalize development drilling locations for the extremities of the field.

An amendment to the Norman Wells development plan to initiate a pilot hydrocarbon miscible flood was submitted to the Board by **Imperial**. The Minister of Indian and Northern Affairs Canada approved this project following

Figure 18
Northern Frontier Regions



an a Board review and recommendations. The pilot project is expected to be conducted over a three year period and will assess the technical merits of the hydro-carbon miscible flood process in the Norman Wells oil pool using propane as the flooding medium. Expected startup date is February 1993.

Imperial also applied and received approval for projects costing \$9.6 million; such as upgrading the town's water supply, increasing the water injection at Bear Island terminal #4 by 824 cubic metres per day and expansion of the slop facilities treating capability.

Pointed Mountain

The Pointed Mountain gas field in the Northwest Territories near the Yukon border, produced 86.7 million

cubic metres (3.06 billion cubic feet) of gas in 1992, compared with 90 million cubic metres (3.17 billion cubic feet) in 1991. Cumulative production to 31 December 1992 reached 8.5 billion cubic metres (299 billion cubic feet).

Cameron Hills

Paramount Resources Ltd. submitted an amendment to its development plan to extend Phase I (extended production testing) over a two year period, rather than one, as was originally proposed. The amendment was approved by the Minister of Indian and Northern Affairs Canada. Cameron Hills is located in the Northwest Territories near the Alberta border.

Kotaneelee

Kotaneelee gas field, located in the southeastern corner of the Yukon Territory, produced 506.9 million cubic metres (17.9 billion cubic feet) in 1992, compared with 227.2 million cubic metres (8 billion cubic feet) in 1991. Cumulative production to 31 December 1992 was 779.6 million cubic metres (27.5 billion cubic feet). Kotaneelee is located in the southeastern corner of the Yukon Territory.

Arctic Islands

Bent Horn

Panarctic Oils Ltd. transferred two shipments of oil from the Bent Horn field located on Cameron Island, Northwest Territories. The M.V. Arctic tanker ship departed from Cameron Island on 21 August and 13 September with shipments of 24 321 cubic metres (152 981 barrels) and 24 371 cubic metres (153 297 barrels), respectively. Cumulative oil production to 31 December totals 264 602 cubic metres (1.7 million barrels). At year end there were 778 cubic metres (4 900 barrels) in storage at the Bent Horn facility.

Panarctic's winter operation of trucking oil from Bent Horn over sea ice to Rea Point has been approved. This operation will proceed in 1993 if ice conditions are favourable.

Well Operations

During 1992 approval was given for the abandonment of 20 previously suspended wells in the Northwest Territories of which two were in the Mainland area, 13 in the Mackenzie Delta and five in the Arctic Islands.

Legislation and Regulations

In 1992, Board staff, in consultation with representatives from the Department of Energy, Mines and Resources, the Nova Scotia and Newfoundland Departments of Natural Resources, the Canada-Newfoundland Offshore Petroleum Board and Canada-Nova Scotia Offshore Petroleum Board worked on several legislative initiatives, including:

- ▲ implementing of recommendations of the Royal Commission on the Ocean Ranger Disaster in the *Canada Oil and Gas Operations Act* proclaimed on 2 September to improve worker protection. Related legislation in the Newfoundland Accord and the Nova Scotia Accord was also amended;
- the *Installations Regulations* which establish the minimum technical requirements for design, construction and installation, inspection, operation, maintenance and repair of an installation are currently being reviewed by the Privy Council Office and Justice department.; Promulgation is expected in 1993. Associated with these regulations is a cooperative effort with the Canadian Coast Guard to develop a common mobile offshore drilling unit (MODU) standard;
- ▲ the *Certificate of Fitness Regulations* are being reviewed for promulgation in 1993. These regulations are part of the certification process recommended by the Ocean Ranger Commission and the subsequent Harrison Task Force Report. They list the organizations approved to act as certifying authorities and their responsibilities;

- ▲ the *Canada Oil and Gas Geophysical Regulations*, which regulate all geophysical operations on lands under federal jurisdiction, were reviewed and promulgation is expected in 1993;
- ▲ the drilling regulations were prepared for the Newfoundland Accord and the Nova Scotia Accord, including measures affecting human safety, environmental protection and conservation of hydrocarbon resources;
- ▲ drafting continued on the Accord version of the production and conservation regulations which establish procedures for the development and production of oil and gas;
- ▲ diving regulations set out operational requirements for diving programs and established a certification system for divers; and,
- ▲ occupational safety and health regulations established procedures to ensure a safe and healthy workplace.

Safety

Inspections

Board staff from the Yellowknife office inspect exploration and production sites to ensure that the operations are conducted in accordance with the approved program and the regulatory requirements. The staff inspectors are

also designated as Safety Officers under the *Canada Labour Code* and monitor the compliance of the operations with Part II of the Code. In 1992, a total of 15 well and drilling operations, five geophysical and three production facility inspections were conducted.

Lost-Time Accidents

There were six lost-time accidents reported during 1992 for the non-Accord frontier lands. Three of the accidents involved shallow gas encountered while drilling holes for seismic charges in the Mackenzie Delta. One incident occurred at **Imperial Oil Resources Limited's** Norman Wells production site and the remaining two happened at **Panarctic Oil Limited's** operation in the Arctic Islands.

Diving

In 1992, Board staff reached an agreement with the Accord boards concerning the mutual recognition of diving certificates and established a joint effort in the administration of diving exams, which are mandatory for key diving personnel seeking certification. In addition Board staff continued to assist the Accord boards in their review of diving programs and the inspection of diving operations, including the related plant and equipment.

Supreme Court of Canada

The Grand Council of the Crees (of Québec) and the Cree Regional Authority v. Attorney General of Canada and the National Energy Board

The Supreme Court of Canada will decide whether a **Hydro-Québec** export licence application may be granted without cost disclosure and whether conditions concerning generation facilities may be included in an export licence. Leave to appeal was granted 11 June 1992 and the case has yet to be heard.

Hydro-Québec applied to the Board for licences to export electricity to the **New York Power Authority** and the **Vermont Joint Owners**.

The Board's decision approving **Hydro-Québec's** application imposed a condition that the licences will remain valid provided that "any production facility required... to supply the exports authorized... will have been subjected, prior to its construction, to the appropriate environmental assessment and review procedures..."

The **Procureur général du Québec, Hydro-Québec**, and the **Grand Council of the Crees (of Québec)** appealed to the Federal Court of Appeal. The judgment of that court, released 9 July 1991, held that the licence condition imposed by the Board exceeded the authority of the *National Energy Board Act*. The Court interpreted the Board's authority to exclude the power to impose conditions which pertained to facilities for the production of electricity and held that the powers of the Board were restricted to matters concerning electricity exports. Accordingly, the conditions were severed from the licence.

Subsequently, the **Grand Council of the Crees (of Québec)**

applied to the Supreme Court of Canada for leave to appeal on the grounds that:

- ▲ the Federal Court of Appeal erred in law in upholding the Board's decision to grant export licences without disclosure of cost information; and
- ▲ the Federal Court of Appeal erred in law in severing the licence conditions referring to environmental assessments from the export licence.

Federal Court of Appeal

Treaty Eight Tribal Association and the Doig River Indian Band v. National Energy Board

An appeal against a Board decision of 10 January 1991 allowing **Canadian Hunter Exploration Ltd.** to construct three segments of interprovincial pipeline was discontinued in 1992.

On 2 May 1991, the **Treaty Eight Tribal Association** and the **Doig River Indian Band** received leave to appeal from the Federal Court of Appeal on two grounds:

- ▲ that the Board denied the two aboriginal entities procedural fairness by not giving them an opportunity to comment on the Reply filed by **Canadian Hunter** to the submissions made by them to the Board; and,
- the Board failed to provide a full hearing to the two groups whose constitutionally protected treaty rights constituted proprietary interests which could not be affected without a hearing.

Prophet River Indian Band v. National Energy Board

The **Prophet River Indian Band** discontinued an application for leave to appeal the Board's decision not to review its own environmental screening document on the Adsett Pipeline project.

The screening document was issued in conjunction with a public hearing into an application by **Westcoast Energy Inc.** respecting the Adsett project. The document contained the Board's findings concerning the environmental screening required by the *Environmental Assessment and Review Process Guidelines Order*.

On 13 May 1991 the Board denied a band application for review on the grounds of a lack of jurisdiction. Subsequently, on 11 June 1991 the band sought leave to appeal to the Federal Court of Appeal. The application alleged that the Board had erred in law in finding that it could not review its environmental screening document.

CNG Transmission Corporation v. National Energy Board, et al

CNG Transmission Corporation discontinued an appeal of the Board's decision to review the Blackhorse Extension denial.

On 4 July 1991 the Board issued its decision, with reasons to follow, denying an application by **TransCanada PipeLines Limited** to construct a pipeline known as the Blackhorse Extension. Review proceedings were undertaken by **TransCanada**.

On 9 August 1991 the Board decided that the original decision was reviewable. On 30 August 1991 **CNG Transmission** sought leave to appeal the 9 August 1991 decision. That application was placed in abeyance pending the conclusion of a related proceeding in the Federal Court Trial Division. On 27 February 1992 the application for leave to appeal was discontinued by the applicant.

TransCanada PipeLines Limited v. National Energy Board

During 1992 **TransCanada PipeLines Limited** discontinued an application for leave to appeal a Board decision relating to the Blackhorse extension. **TransCanada's** 6 August 1991 court application alleged that the Board erred in law by basing its decision on a finding that was not supported by the evidence before it. The reasons for decision of the Board were released on 25 July 1991.

TransGas Limited v. National Energy Board and TransCanada PipeLines Limited

During 1992 an application for leave to appeal pipeline tolls was filed and later discontinued by **TransGas Limited**.

On 27 May 1992 **TransGas** applied to the Federal Court of Appeal for leave to appeal a decision of the Board released on 30 April 1992 which set tolls for shippers using the pipeline of **TransCanada PipeLines Limited** during the year 1992. The grounds for the application were:

- ▲ that the Board erred in law by failing to refund excessive interim toll payments made by **TransGas**;
- that the Board erred in law or lost jurisdiction by failing to consider a relevant matter, namely the amount of the excessive interim tolls which were paid by **TransGas**; and,
- ▲ that the Board erred in law or lost jurisdiction by exercising its discretion in a manner that was unreasonable or which unfairly discriminated against **TransGas**.

TransGas also applied to the Board for a review of the Board's decision pursuant to Section 21 of the *National*

Energy Board Act. The application for leave to appeal was placed in abeyance pending the decision of the Board on the review application. The Board subsequently granted the relief requested by the applicant.

Federal Court Trial Division

Wardair Canada Ltd. et al v. Her Majesty the Queen of Canada, the Attorney General of Canada and the National Energy Board

Wardair and Canadian Pacific Air Lines applied to the Federal Court Trial Division in 1983 for an order that

the Board was without jurisdiction to set prices for fuel used by their aircraft on international flights during the period from 1 February 1982 to 12 May 1983. The Applicants have not proceeded with this action since 1983. The Department of Justice has carriage of this action on behalf of the Board.

No new legislation or regulations were implemented during 1992, but several amendments and other changes were being developed.

Cost Recovery Regulations

Regulations permitting the Board to recover the costs of regulation directly from regulated companies will be amended to provide some minor adjustments in the method of recovering the costs.

Since 1991, total costs of operating the Board have been recovered from regulated companies rather than being met out of general government revenues. Costs incurred in the regulation of frontier lands — since certain responsibilities of the Canada Oil and Gas Lands Administration were transferred to the Board — are not so recovered.

Onshore Pipeline Regulations

Onshore Pipeline Regulations specify the requirements for the protection of property and the environment and the safety of the public and the company's employees in the design, construction, operation and abandonment of onshore pipelines.

The regulations will be revised as the result of recommendations made by the Board in a report from an investigation into a fatal accident which took place in 1985.

These amendments, which are the product of lengthy consultations between the Board and industry, will pertain to the improved maintenance and operation of onshore oil and gas pipelines under the Board's jurisdiction. For example, improvements in welding techniques, control systems and safety training programs will be covered.

Also included in the forthcoming revisions will be changes to reference

the revised editions of the Canadian Standards Association's pipeline standards, and improve certain portions of the regulations based on the Board's experience since the *Onshore Pipeline Regulations* were introduced. These changes will be the subject of the full public review and commenting process.

A separate study will be initiated in 1993 to review the regulations with regard to the safety and environmental protection requirements for the design, construction, operation and abandonment of gas plants under the Board's jurisdiction.

Pipeline Crossing Regulations, Parts I and II

Regulations which came into effect in October 1988 establish the conditions under which excavation and construction activities affecting pipelines can be safely conducted by third parties.

In June 1990, Section 112 of the *National Energy Board Act*, which deals with third party crossings, was amended to broaden the scope of Board jurisdiction to include all excavation activity within 30 metres of the pipeline right of way. As a result, the *Pipeline Crossing Regulations* require amendment to clarify the addition of the 30-metre zone.

The Regulations also require some administrative and editorial revisions resulting from review by the Standing Committee for the Scrutiny of Regulations. Suggestions for amendments will also be solicited from municipalities, utilities, excavators, pipeline companies and other interested parties.

Export and Import Reporting Regulations

Proposed regulations would require persons exporting oil, gas and power or importing gas to provide

information to the Board about the export or import.

The information is similar to that currently required by the Part VI Regulations. However, at the suggestion of the Standing Joint Committee for Scrutiny of Regulations, the Board decided to remove the reporting requirement from the Part VI Regulations and make new regulations under Subsection 129(1) of the *National Energy Board Act* to provide for reporting requirements.

These regulations will be made concurrently with the proposed amendments to the Part VI Regulations.

Part VI Regulations

The *NEB Part VI Regulations* will be amended to reflect recent changes to export regulation, to improve the language of the regulations and to address concerns expressed in recent years by the Standing Joint Committee for Scrutiny of Regulations.

Comments were sought from industry in the fall of 1990 following briefing sessions with Board staff.

Regulations to Implement New Electricity Policy

Since the passage of *Bill C-23 (An Act to Amend the National Energy Board Act)* which came into effect on 1 June 1990, regulations have been drafted to implement the new electricity policy.

The draft regulations set out, among other things, information requirements for applications in respect of electricity exports and international power line facilities, terms and conditions of export and facilities permits, and the

matters which the Board may consider in deciding whether to recommend a public hearing process. These regulations will, in part, replace existing *NEB Part VI Regulations* and a Schedule to the draft Rules of Practice and Procedure, will streamline the Board's operations and will reduce the level of regulation in keeping with the government's more market-based approach to energy policy.

Following the judgement of the Federal Court of Appeal in the case of the **Attorney General of Quebec v. National Energy Board** dated 9 July 1991, the proposed regulations required further analysis and consideration.

Regulations Pertaining to Crossings Involving International Power Lines

Prior to *Bill C-23 (An Act to Amend the National Energy Board Act)* coming into effect, the draft regulations in respect of crossings involving international power lines had been finalized. These regulations are now being reviewed for conformance with *Bill C-23*. The proposal consists of two sets of regulations. The first set, the *International Power Line Crossings, Construction and Abandonment Regulations*, deals with crossings by international power lines as well as the companies' responsibilities to maintain crossing records, records of abandoned crossings and report of incidents. The second set, the *International Power Line Crossing Regulations*, deals with crossing of international power lines and sets out the terms and conditions under which the Board's permission to cross such power lines is not necessary.

January 1992

Canadian Electrical Utilities: Analysis of Generation and Trends, 1989

Cat. No. NE1-2/1989E

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Excavation and Construction Near Pipelines (revised)

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May 1992

Proposed Changes to the Application of the Market-Based Procedure

Cat. No. NE22-1/1992-6E

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June 1992

Environmental Screening Document — Esso Resources, Gulf Canada, Shell Canada

Cat. No. NE22-1/1992-12E

ISBN 0-662-19831-X

July 1992

Natural Gas Market Assessment: Long-term Canadian Natural Gas Contracts

Cat. No. NE23-27/1992E

ISBN 0-662-19891-3

August 1992

National Energy Board Annual Report Supplement

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Canadian Electrical Utilities Analysis of Generation and Trends, 1990

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REASONS FOR DECISIONS PUBLISHED IN 1992

March 1992

Amoco Canada, Canadian Occidental Petroleum, North Canadian Marketing and East Georgia Cogeneration (Vermont) Limited Partnership, ProGas Limited, Shell Canada
(Gas Exports)
Hearing Order GH-3-91 (Volume 2)

March 1992

Poco Petroleums Ltd. & North Canadian Oils
(Gas Exports)
Hearing Order GH-7-90

March 1992

TransCanada PipeLines Limited
(Tolls)
Hearing Order RH-4-91

April 1992

Westcoast Energy Inc.
(Facilities)
Hearing Order GH-2-92

May 1992

Alberta Natural Gas Company Ltd.
(Gas Exports)
Hearing Order GHW-2-91

June 1992

Trans Mountain Pipe Line Company Ltd.
(Tolls)
Hearing Order RH-3-91

June 1992

Canadian Petroleum Association
(Gas Exports)
Hearing Order GH-R-1-91

June 1992

TransCanada PipeLines Limited
(Gas Exports) (Blackhorse Review)
Hearing Order GH-R-1-92

June 1992

Manitoba Hydro-Electric Board
Exports of Electricity
Hearing Order EW-1-91

June 1992

Interprovincial Pipe Line Inc.
(Tolls)
Hearing Order RH-2-91

July 1992

Westcoast Energy Inc.
(Facilities)
Hearing Order GH-3-92

August 1992

Westcoast Energy Inc.
(Tolls)
Hearing Order RH-1-92

September 1992

Alberta Natural Gas Company Ltd.
(Tolls)
Hearing Order RHW-1-92

October 1992

TransCanada PipeLines Ltd.
Gas Exports
Hearing Order GH-4-92

December 1992

Various Gas Export Licences
(Gas Exports)
Hearing Order GH-5-92

December 1992

Trans Québec & Maritimes Pipeline Inc.
(Tolls)
Hearing Order RH-4-92

December 1992

British Columbia Hydro and Power Authority
(Electricity Exports)
Hearing Order EW-2-91

Appendix A

Companies Under National Energy Board Jurisdiction

- A1 Group 1 Gas Pipelines
- A2 Group 1 Oil and Products Pipelines
- A3 Group 2 Gas Pipelines
- A4 Group 2 Oil and Products Pipelines
- A5 Gas Export Licence Holders
- A6 Electric Power Licences, Certificate and Permit Holders

Appendix B

Energy Overview

- B1 Canadian Energy Consumption
- B2 Crude Oil and Equivalent Supply and Disposition
- B3 Natural Gas Supply and Disposition
- B4 Natural Gas Liquids Supply and Disposition
- B5 Electricity Generation and Disposition

Appendix C

Oil

- C1 Certificates Issued During 1992 Approving New Oil Pipeline Facilities Including Pipeline Construction Exceeding 40 Kilometres in Length
- C2 Orders Issued During 1992 Approving Oil Pipeline Facilities Including Pipeline Construction Not Exceeding 40 Kilometres in Length
- C3 Exports of Canadian Crude Oil and Equivalent - 1991 and 1992
- C4 Exports of Canadian Crude Oil and Equivalent
- C5 Exports of Petroleum Products — 1992
- C6 Exports of Petroleum Products — 1991 and 1992

Appendix D

Gas

- D1 Certificates Issued During 1992 Approving New Gas Pipeline Facilities Including Construction Exceeding 40 Kilometres in Length
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- D4 Licences and Long-Term Orders to Import Natural Gas as at 31 December 1992
- D5 Licences and Long-Term Orders to Export and/or Import Propane, Butanes, Ethane and Ethylene as at 31 December 1992
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- D7 Natural Gas Exports by Export Point
- D8 Imports of Natural Gas
- D9 Net Exports of Propane, Butanes, Ethane and Ethylene Under Licences and Orders
- D10 Net Imports of Propane, Butanes, Ethane and Ethylene Under Licences and Orders
- D11 Total Net Exports of Propane and Butanes

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- E2 Amending Orders Issued During 1992 Relating to International Power Lines
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- E6 Electricity Trade Between Canada and the United States (by Province)
- E7 Electricity Trade Between Canada and the United States (by American Region/State)

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Financial Regulation

- F1 Financial Information - Group 1 Oil Pipeline Companies
- F2 Financial Information - Group 1 Gas Pipeline Companies

Companies Under National Energy Board Jurisdiction

The following is a list of pipeline companies (a) which own and/or operate interprovincial or international pipelines under the Board's jurisdiction, companies that have been granted licences to export natural gas, and electric utilities that have been granted electricity export licences by the Board.

Pipelines

Group 1 Gas

Alberta Natural Gas Company Ltd.
Foothills Pipe Lines Ltd.
TransCanada PipeLines Limited
Trans Québec & Maritimes Pipeline Inc.
Westcoast Energy Inc.

Group 1 Oil and Products

Cochin Pipe Lines Ltd.
Interprovincial Pipe Line Inc.
Interprovincial Pipe Line (NW) Ltd.
Trans Mountain Pipe Line Company Ltd.
Trans-Northern Pipelines Inc.

Group 2 Gas

Amarada Hess Canada Ltd.
Amoco Canada Petroleum Company Ltd.
(Inactive)
Amoco Canada Resources Limited
(Inactive)
Bonanza Oil and Gas Ltd.
Bow Valley Industries Ltd.
BP Resources Canada Limited
Canadian Hunter Exploration Ltd.
Canadian-Montana Pipe Line Company
Centra Transmission Holdings Inc.
Champion Pipe Line Corporation Limited
Consumers' Gas (Canada) Limited
Genesis Pipeline Canada Ltd.
Huntigdon International Pipeline Corporation
Many Islands Pipe Lines (Canada) Limited
Mid-Continent Pipelines Limited
Minell Pipeline Ltd.

Murphy Oil Company Ltd. (Inactive)
Niagara Gas Transmission Limited
Novacorp International Pipelines Ltd.
Peace River Transmission Company Limited
Petrorep (Canada) Ltd.
Poco Petroleum Ltd.
SCL Quebec Pipeline Inc.
St. Clair Pipelines Ltd.
Union Gas Limited
167496 Canada Ltd.

Group 2 Oil and Products

Aurora Pipe Line Company
Dome Kerrobert Pipeline Ltd. and Pan
Canadian Kerrobert Pipeline Ltd.
Dome NGL Pipeline Ltd.
Dome NGL Pipeline Ltd. and Amoco
Canada Petroleum Company Ltd.
Esso Resources Canada Limited
Husky Border Pipelines Ltd.
Manito Pipelines Ltd.
Montreal Pipe Line Limited
Mont Resources Limited
Murphy Oil Company Ltd.
Northwest Transmission Company Limited
Petroleum Transmission Company
Pouce Coupé Pipe Line Ltd.
Shell Canada Products Limited
Sun Pipe Line Company
Wascana Pipe Line Ltd.
Westspur Pipe Line Company (1985) Inc.
Windsor Storage Facility Joint Venture
Yukon Pipelines Limited

Gas Export Licence Holders

AG-Energy, Limited Partnership
Alberta and Southern Gas Co. Ltd.
Alberta Northeast Gas Ltd. & AEC Oil and
Gas Company^(a)
Alberta Northeast Gas Ltd. & ATCOR
Ltd.(a)
Alberta Northeast Gas Ltd. & ProGas
Limited(a)
Alberta Northeast Gas Ltd. & TransCanada
PipeLines Limited^(a)
Amoco Canada Petroleum Company Ltd.

(a) The pipeline companies have been divided into two groups, Group 1 consists of the ten major pipeline companies which are audited by the Board on a regular basis and whose operating results are continuously monitored by the Board. The 42 companies under the Board's jurisdiction that are not included in Group 1 have been designated as Group 2 companies

Amoco Canada Resources Limited	ProGas Limited
Brymore Energy Ltd.	Ramarro Resources Inc.
Canadian Hunter Exploration Ltd.	Selkirk Cogen Partners, Limited Partnership
Canadian Hydrocarbons Marketing Inc.	Selkirk Cogen Partners, Limited Partnership and ATCOR Ltd. ^(a)
Canadian-Montana Pipe Line Company	Selkirk Cogen Partners, Limited Partnership and Esso Resources Canada ^(a)
Canadian Occidental Petroleum Limited	Selkirk Cogen Partners, Limited Partnership and PanCanadian Petroleum Limited ^(a)
CanStates Gas Marketing and Transco Energy Marketing Company ^(a)	Saranac Power Partners, Limited Partnership and Shell Canada Limited ^(a)
Canterra Energy Ltd.	Shell Canada Limited
CanWest Gas Supply Inc.	Talisman Energy Inc. (formerly BP Resources Canada Limited)
Dartmouth Power Associates, Limited Partnership	TransCanada PipeLines Limited
Direct Energy Marketing Limited	Unigas Corporation
Encogen Four Partners, Limited Partnership	Union Gas Limited
Esso Resources Canada Limited	Vector Energy Inc.
FSC Resource Limited	Westcoast Energy Inc.
Fulton Cogeneration Associates	Western Gas Marketing Limited
Gulf Canada Resources Limited	Electric Power Licencees, Certificate and Permit Holders^(a)
Husky Oil Operations Ltd.	Boise Cascade Canada Ltd.
ICG Transmission Holdings Ltd.	British Columbia Hydro and Power Authority
ICG Utilities (Ontario) Ltd. ^(b)	Canadian Niagara Power Company Limited
Indeck Gas Supply Corporation	The Canadian Transit Company
Kamine/Besicorp Carthage, Limited Partnership	Cedars Rapids Transmission Company, Limited
Kamine/Besicorp South Glens Falls, Limited Partnership	Cominco Ltd.
Kamine Beaver Falls Cogen Co., Inc., as managing general partner of Kamine/Besicorp Beaver Falls L.P.	Cornwall Street Railway Light and Power Co. Ltd. ^(c)
Kamine Syracuse Cogen Co., Inc., as managing general partner of Kamine/Besicorp Syracuse L.P.	The Detroit and Windsor Subway Company
Kanngaz Producers Ltd.	Fraser Inc.
L & J Energy Systems, Inc.	Hydro-Québec
Many Islands Natural Gas (Canada) Limited	Maine and New Brunswick Electrical Power Company, Limited
Mobil Oil Canada, Ltd.	The Manitoba Hydro-Electric Board
New England Power Company	The New Brunswick Electric Power Commission
New York Gas and Electric Corporation	Ontario Hydro
Niagara Gas Transmission Limited	Roseau Electric Cooperative Inc.
Norcen Energy Resources Limited	Saskatchewan Power Corporation
North Canadian Oils Limited	TransAlta Utilities Corporation
Northern Minnesota Utilities, a Division of UtiliCorp United Inc.	West Kootenay Power and Light Company, Limited
Pan-Alberta Gas Ltd.	
Petro-Canada	
Poco Petroleums Ltd.	

(a) Joint licence holders

(b) Re-export of import

(c) All licencees except Cornwall Electric export over their own facilities for which Board certificates have been issued. Cornwall Electric exports its power over the facilities of Cedars Rapids.



Energy Overview

B1. Canadian Energy Consumption(a) (Petajoules)

	1988	1989	1990	1991(p)	1992(e)
Petroleum(b)	3 369.5	3 528.3	3 407.0	3 113.5	3 164.5
Natural Gas(c)	2 372.3	2 526.6	2 443.5	2 388.7	2 460.4
Hydroelectricity(d)(f)	1 096.4	1 035.5	1 058.3	1 099.5	1 125.0
Nuclear	958.9	937.7	832.0	969.5	914.8
Coal	1 200.3	1 197.8	1 077.2	1 089.6	1 109.1
Renewable and Other	553.5	543.2	541.1	539.0	536.9
TOTAL FOR CANADA	9 550.9	9 769.1	9 359.1	9 199.8	9 310.7

a-Includes non-energy use, own use and conversions and, includes fuel for electricity exports.

b-Includes LPG's.

c-Excludes reprocessing shrinkage and includes ethane, reprocessing fuel and fuel used for bitumen production.

d-Hydro and nuclear are converted at 3.6 PJ/TWh and 12.1 PJ/TWh respectively.

e-Estimate.

f-Includes energy used to produce steam.

p-Preliminary.

B2. Crude Oil and Equivalent Supply and Disposition (Thousand Cubic Metres per Day)

	1988	1989	1990	1991	1992(e)
Supply					
Canadian Production (a)	272.6	264.2	263.4	264.0	276.1
Imports (b)	71.7	77.3	86.2	91.9	87.0
Total Supply (d)	344.3	341.5	349.6	355.9	363.1
Disposition					
Domestic (b)	238.3	249.2	256.6	236.2	231.8
Exports (c)	112.8	102.9	104.2	121.9	134.0
Total Disposition (d)	351.1	352.1	360.8	358.1	365.8

a- Source: NEB.

b- Source: EMR Form 153 - Refinery Receipts.

c- Source: NEB Form 306 - Crude Oil Exports.

d- Total supply does not equal total disposition due to inventory changes, etc.

e- Preliminary

Energy Overview

B3. Natural Gas Supply and Disposition (Billion Cubic Metres)

	1988	1989	1990	1991	1992 (d)
Supply					
Marketable Gas Production	93.9	98.1	101.0	106.4	110.0
Imports	.6	1.2	.7	.5	2.6
Total Supply	94.5	99.3	101.7	106.9	112.6
Disposition					
Net Sales in Canada	52.7	56.9	54.5	54.7	56.5
Other Uses in Canada (a)	2.9	2.8	4.5	3.1	3.3
Exports	35.9	37.9	40.7	47.8	56.1
Total Disposition (b) (c)	91.5	97.6	99.7	105.6	115.9

a - Includes pipeline fuel and losses and other deliveries, less inventory changes.

b - Includes synthetic natural gas but excludes reprocessing shrinkage and reprocessing fuel which are included in marketable gas production.

c - Total supply does not equal total disposition due to inventory changes, etc.

d - Preliminary

B4. Natural Gas Liquids Supply and Disposition (Thousand Cubic Metres per Day)

	1988	1989	1990	1991	1992(e)
Supply					
Canadian Production (a)	68.0	69.6	66.8	73.2	75.4
Imports (b)	0.7	0.7	0.4	0.6	0.7
Total Supply (d)	68.7	70.3	67.2	73.8	76.1
Disposition					
Domestic (b)	50.0	51.4	49.2	55.8	57.0
Exports (c)	18.3	18.8	19.4	18.4	18.0
Total Disposition (d)	68.3	70.2	68.6	74.2	75.0

a- Source: NEB.

b- Source: NEB Form 145 and 86A.

c- Source: NEB Form 157 and 86A.

d- Total supply does not equal total disposition due to inventory changes, etc.

e- Preliminary

B5. Electricity Generation and Disposition (Terawatt Hours)

	1988	1989	1990	1991	1992
Total Generation	490.6	482.7	467.6	489.2	504.0 (b)
Imports(a)	2.8	8.7	15.4	1.7	1.8
Total supply	493.4	494.4	483	490.9	505.8 (b)
Demand	463.7	472.9	466.7	471.1	479.6
Exports	29.7	18.5	16.3	19.8	26.2

a - Excludes exchanges between Canada and the United States

b - Preliminary

APPENDIX C

Oil

C1. Certificates Issued During 1992 Approving Oil Pipeline Facilities Including Pipeline Construction Exceeding 40 Kilometres in Length

Applicant	Certificate No.	Issued	Facilities	Estimated Cost(\$)
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No Certificates were issued in 1992.

C2. Orders Issued During 1992 Approving Oil Pipeline Facilities Including Pipeline Construction Not Exceeding 40 Kilometres in Length

Applicant	Certificate No.	Issued	Facilities	Estimated Cost(\$)
Amoco Canada Petroleum Company Ltd.	XO-24-92	92 09 17	Installation of a dehydrator on the ESJV pipeline system at Windsor Terminal, Ontario	250 000
Cochin Pipe Lines Ltd.	XO-9-92	92 03 24	Reconstruction of piping at Windsor Terminal, Ontario	400 000
	XO-22-92	92 08 13	323.9 mm launching and receiving traps at Sarnia Dow Chemical Plant, Ontario	23 000
Dome Kerrobert Pipe Line Ltd. and Pan Canadian Kerrobert Pipeline Ltd.	XO-20-92	92 08 06	Pump station near Laporte, Saskatchewan	2 070 000
Interprovincial Pipe Line Inc.	XO-1-92	92 01 16	Tank fire protection systems at Sarnia Terminal and Westover Station, Ontario	8 000 000
	XO-4-92	92 02 06	Miscellaneous Projects	15 901 700
	XO-6-92	92 03 05	Miscellaneous Projects	69 125 100
	XO-13-92	92 05 07	Hydrostatic test water treatment system at Sarnia Terminal, Ontario	2 476 500
	XO-14-92	92 05 21	Condensate breakout tankage at Cromer, Manitoba	6 200 000
	XO-15-92	92 05 21	Miscellaneous Projects	500 600
	XO-17-92	92 07 30	Replacement of central computer at Edmonton, Alberta	787 500
	XO-18-92	92 12 18	Refined product sampling system upgrade at Gretna, Manitoba	38 800
	XO-21-92	92 08 27	Bioremediation facilities at Kerrobert Pump Station, Saskatchewan and Cromer Terminal, Manitoba	507 700
	XO-23-92	92 12 17	Miscellaneous Projects	48 940 000

Oil

C2. Orders Issued During 1992 Approving Oil Pipeline Facilities Including Pipeline Construction Not Exceeding 40 Kilometres in Length (continued)

Applicant	Certificate No.	Issued	Facilities	Estimated Cost(\$)
Interprovincial Pipe Line Inc.	XO-25-92	92 12 18	Purchase of 94 acres of land near Westover, Ontario	200 000
Interprovincial Pipe Line (NW) Ltd.	XO-8-92	92 03 12	Miscellaneous Projects at Norman Wells, Northwest Territories	1 411 000
	XO-10-92	92 04 07	Installation of leak detection software and hardware at Norman Wells, Northwest Territories	88 500
Manito Pipelines Limited	XO-3-92	92 09 19	Tie-ins and metering facilities at Neilburg Pump Station near Marsden, Saskatchewan	275 000
	XO-7-92	92 02 21	Additional piping, fittings and meters at Unity Pump Station, Saskatchewan	167 000
	XO-26-92	92 09 11	Modifications to the pig receiving trap at Lone Rock Pump Station near Lloydminster, Saskatchewan	25 500
Murphy Oil Company Ltd.	XO-5-92	92 02 25	17 km of 273 mm looping; 2 pumps; 1 storage tank near Milk River, Alberta	2 600 000
	XO-28-92	92 10 20	18.1 km of 168.3 mm pipeline near Kerrobert, Saskatchewan	790 000
	XO-32-92	92 12 18	Installation of light crude oil facilities near Milk River, Alberta	190 000
	XO-29-92	92 10 20	30 m of 323.9 mm above-ground pipeline at the Ceylon Pump Station, Saskatchewan	8 000
Petroleum Transmission Company	XO-2-92	92 01 30	Remote operator and programmable logic controller near Chaplin, Saskatchewan	38 500
Trans Mountain Pipe Line Company Ltd.	XO-12-92	92 06 04	MTBE Facilities	6 477 300
	XO-16-92	92 07 13	120 m of 610 mm pipeline crossing the Coldwater River, British Columbia	235 000
	XO-27-92	92 09 28	Mainline valve replacement at Albreda Pump Station, British Columbia	146 810
	XO-30-92	92 12 17	Miscellaneous Projects	9 526 400
Trans-Northern Pipelines Inc.	XO-11-92	92 06 18	Miscellaneous Projects	2 862 000
	XO-19-92	92 07 17	Fly Creek Pipeline relocation near Cornwall, Ontario	50 000

Oil

C3. Exports of Canadian Crude Oil and Equivalent - 1991 and 1992 (Cubic Metres)

Consignee	1991		1992(a)	
	Total	Daily Average	Total	Daily Average
Amoco Production Company	6 884 696	18 862	8 061 090	22 025
Ashland Oil Inc.	1 679 161	4 600	1 779 350	4 862
BP Oil	1 047 158	2 869	929 770	2 540
CENEX	1 085 896	2 975	1 227 700	3 354
Chinese Petroleum Corporation	70 451	193	-	-
Clark Oil & Refining	3 209 389	8 793	3 562 730	9 734
Conoco Inc.	2 496 299	6 839	2 266 330	6 192
Crystal Refining	31 307	86	23 990	66
Exxon Company, U.S.A.	1 516 836	4 156	950 320	2 597
Frontier Oil and Refining Co.	39 592	108	-	-
Koch Refining Company	9 133 164	25 022	8 814 070	24 082
Laketon Refining Corp.	373 952	1 025	212 830	582
Louisiana Land Exploration	-	-	294 840	806
MG Refining & Marketing	33 680	92	44 340	121
Marathon Petroleum Company	754 371	2 067	1 027 530	2 807
Marubeni Corporation	70 189	192	343 220	938
Mobil Oil Corporation	6 074 734	16 643	6 872 780	18 778
Montana Refining Company	281 387	771	284 370	777
Murphy Oil U.S.A. Inc.	1 039 520	2 848	1 161 210	3 173
Pacific Refining Co.	-	-	70 330	192
Shell Oil Company	114 535	314	782 440	2 138
Sinclair Oil Corporation	357 242	979	400 290	1 094
Sun Refining and Marketing Co.	2 984 829	8 178	3 599 330	9 834
Texaco U.S.A.	196 632	539	468 730	1 281
Total Petroleum Inc.	387 073	1 060	493 460	1 348
Unocal Corp of California	151 036	414	565 470	1 545
United Refining Company	3 107 935	8 515	3 413 930	9 328
The Uno-Ven Company	1 172 678	3 213	986 970	2 697
U.S. Oil & Refining Co.	191 973	526	164 770	450
Other	-	-	294 690	805
Total	44 485 716	121 879	49 096 880	134 144

a - Preliminary

Oil

C4. Exports of Canadian Crude Oil and Equivalent (Cubic Metres per Day)

	1988	1989	1990	1991	1992(a)
Light Canadian Crude and Equivalent	50 214	47 136	44 814	62 335	73 926
Heavy Crude Oil	62 565	55 734	59 379	59 544	60 218
Total	112 779	102 870	104 193	121 879	134 144

a - Preliminary

C5. Exports of Petroleum Products - 1992 (Cubic Metres)

Month	Motor Gasoline	Middle Distillates	Heavy Fuel Oil	Aviation Turbine Fuel	Partially Processed Oil	Total(a)
January	227 868	436 305	169 947	20 954	0	855 074
February	422 703	546 212	203 494	44 402	41 531	1 258 342
March	376 364	517 902	153 125	23 405	3 191	1 073 987
April	340 865	301 607	128 928	77 703	37 339	886 442
May	417 543	241 864	124 159	41 389	0	824 955
June	400 684	312 619	138 777	55 041	26 886	934 007
July	255 947	309 760	240 228	45 161	0	851 096
August	237 084	248 372	114 328	30 947	33 652	664 383
September	290 981	337 438	235 094	39 329	0	902 842
October	260 250	385 004	187 321	40 496	0	873 071
November	239 825	359 174	177 379	28 558	0	804 936
December(b)	311 200	473 400	195 625	38 140	0	1 018 365
Total	3 781 314	4 469 657	2 068 405	485 525	142 599	10 947 500

a - Excludes propane, butane, lubricants, greases, asphalt, petrochemicals, etc.

b - Preliminary

C6. Exports of Petroleum Products - 1991 and 1992 (Cubic Metres)

	1991	1992(a)
Bell's Petroleum Ltd.	3 281	1 100
Canadian Turbo Inc.	194 034	80 900
Chevron Canada Limited	609 739	485 600
Consumers' Co-operative Refineries Limited	70 874	108 300
Cosmart Marketing Corporation	5 621	-
Daigle Oil Co.	8 387	13 700
Exit 52E Inc.	11 143	-
Goetz Energy Corporation	3 320	-
Griffith Oil Co., Inc.	18 716	28 900
Husky Oil Marketing Company	5 729	26 900
ICS Petroleum Ltd.	-	35 100
Imperial Oil Limited	2 083 850	1 726 700
Irving Oil Limited	2 704 760	2 310 700
Kildair Service Ltée	13 094	127 300
Les Pétroles Calex Ltée	37 989	9 400
M.A.S. Wells Co. Ltd.	419	-
MX Petroleum Corp.	50 885	60 700
MacEwen Petroleum Inc.	44 712	40 200
Northwest Terminals	12 617	-
Neste Petroleum (Canada) Inc.	-	11 400
Newfoundland Processing Limited	3 526 096	2 378 900
Noco Energy Corp.	463 511	373 000
Northridge Petroleum Marketing Inc.	529	12 300
Novacor Chemicals (Canada) Ltd.	324 620	167 600
Olco Oil	385 315	398 600
Ontario Fuels Ltd.	625	-
Petro-Canada Products	293 675	589 200
Pétrole Moderne Enr.	997	10 200
Pétroles Norcan Inc.	-	2 400
Robbins Feed & Fuel Ltd.	57	-
Robo Petroleum Inc.	-	200
Roy-L Canadian Fuels Co.Ltd.	-	700
Shell Canada Limited	689 276	821 600
Sipco Oil Limited	3 552	3 400
Sunoco Inc.	357 246	444 400
TexPar Canada	20 977	27 300
Ultramar Canada Inc.	333 291	419 800
Universal Terminals Ltd.	258 580	209 500
White Pass Petroleum Services	5 907	21 500
TOTAL	12 543 423	10 947 500

a - Preliminary

APPENDIX D

Gas

D1. Certificates Issued During 1992 Approving New Gas Pipeline Facilities Including Pipeline Construction Exceeding 40 Kilometres in Length

Applicant	Certificate No.	Issued	Facilities	Estimated Cost(\$)
TransCanada PipeLines Limited	GC-83	92 06 18	249.5 km of looping; 3 relocated compressor units, Saskatchewan, Manitoba, Ontario	326 410 000
	GC-84	92 11 26	366.1 km of looping; 42.8 MW of new compression, Saskatchewan, Manitoba, Ontario	501 200 000
Westcoast Energy Inc.	GC-82	92 06 11	61.5 km of 273.1 mm pipe from Tommy Lakes to Jedney Pipeline, British Columbia	15 800 000

D2. Orders Issued During 1992 Approving New Gas Pipeline Facilities Including Pipeline Construction Not Exceeding 40 Kilometres in Length

Applicant	Certificate No.	Issued	Facilities	Estimated Cost(\$)
Alberta Natural Gas Company Ltd.	XG-1-92	92 01 24	Miscellaneous Projects	7 889 000
	XG-16-92	92 05 04	Three compressor stations, British Columbia	81 760 000
Foothills Pipe Lines Limited	XG-12-92	92 03 19	Replacement of meter tubes at Monchy Station, Saskatchewan-Montana border	527 000
	XG-17-92	92 05 21	Miscellaneous Projects	5 507 700
	XG-20-92	92 05 28	Miscellaneous Projects, Alberta and Saskatchewan	1 058 000
	XG-28-92	92 07 03	Installation of a valve in southern British Columbia; Request for exemption from leave to open	
	XG-34-92	92 07 31	77.6 km of 1067 mm pipeline in southern British Columbia; Request for exemption from PPBOR	
Huntingdon International Pipeline Corporation	XG-15-92	92 06 09	160 m of 610 mm pipeline crossing the international border near Huntingdon, British Columbia	1 284 800
Koch Exploration Canada	XG-53-92	92 12 23	200 m of 88.9 mm polyethylene fuel gas line, Alberta-Saskatchewan border	9 000
Many Islands Pipe Line (Canada) Limited	XG-29-92	92 09 10	5.9 km of 323.9 mm pipeline crossing the Alberta-Saskatchewan border; Purchase of 1.6 km of 323.9 mm Ranfurly Pipeline from Northwestern Utilities Limited	1 088 000

Gas

D2. Orders Issued During 1992 Approving New Gas Pipeline Facilities Including Pipeline Construction Not Exceeding 40 Kilometres in Length (continued)

Applicant	Certificate No.	Issued	Facilities	Estimated Cost(\$)
Petrorep (Canada) Ltd.	XG-4-92	92 01 02	13.57 km of 114 mm sour gas pipeline crossing the British Columbia-Alberta border	1 260 048
TransCanada PipeLines Limited	XG-5-92	92 01 16	Sales metering station at Pickering, Ontario	1 216 000
	XG-8-92	92 03 05	Miscellaneous Projects	24 347 000
	XG-9-92	92 03 05	28.7 km of looping; Compressor unit relocation	33 990 000
	XG-13-92	92 04 16	Replacement of communication system	17 226 000
	XG-18-92	92 07 02	Miscellaneous Projects	1 194 000
	XG-19-92	92 07 02	Beardmore Sales Tap	94 300
	XG-23-92	92 06 17	Blackhorse Extension: 20.6 km of 610 mm pipeline; 1 compressor station; 1 meter station, Ontario	39 058 000
	XG-26-92	92 06 24	Land exemptions for looping referred to in GC-83, issued 92 06 18	
	XG-36-92	92 09 30	Replacement of the carrier pipe within shorted casing, Ontario	175 000
	XG-37-92	92 08 13	Sales tap at St. Michel de Vaudreuil, Quebec	56 300
	XG-48-92	92 12 22	Sales tap at St. Rémi, Quebec	341 000
	XG-49-92	92 12 03	Land exemptions for looping referred to in GC-84, issued 92 11 26	
	XG-50-92	92 12 22	Installation of a sample line at Niagara-on-the-Lake Meter Station, Ontario	47 300
Trans Quebec & Maritimes Pipeline Inc.	XG-30-92	92 08 27	114.3 mm turbine metering station at Mascouche, Quebec	423 000
	XG-31-92	92 08 20	Metering station at Mirabel, Quebec	128 000
	XG-32-92	92 08 27	114.3 mm turbine metering station at Parish of St. Louis-de-Terrebonne, Quebec	445 000
	XG-33-92	92 08 27	Replacement of control centre SCADA computer; Station computers	738 000
	XG-42-92	92 10 21	Miscellaneous Projects	430 500
	XG-43-92	92 10 28	Replacement of heating system at Boisbriand, Quebec and a valve at Joliette, Quebec	35 000
Westcoast Energy Inc.	XG-2-92	92 01 24	Miscellaneous Projects	1 546 000
	XG-3-92	92 01 30	Miscellaneous Projects	5 313 000
	XG-6-92	92 10 30	8.3 km of 150 mm West Clarke Lake Pipeline near Fort Nelson, British Columbia	1 945 000
	XG-7-92	92 02 04	Upgrade Kobes Sewage Lagoon	120 000

Gas

D2. Orders Issued During 1992 Approving New Gas Pipeline Facilities Including Pipeline Construction Not Exceeding 40 Kilometres in Length (continued)

Applicant	Certificate No.	Issued	Facilities	Estimated Cost(\$)
Westcoast Energy Inc.	XG-10-92	92 03 19	Replacement of a compressor unit and related facilities	27 830 000
	XG-11-92	92 03 12	Miscellaneous Projects	7 111 000
	XG-14-92	92 04 27	Replacement of foundation at Savona, British Columbia	900 000
	XG-21-92	92 06 04	Miscellaneous Projects	872 000
	XG-22-92	92 07 30	Miscellaneous Projects	27 104 000
	XG-24-92	92 06 18	Mainline upgrade at Savona, British Columbia	135 000
	XG-25-92	92 07 09	Southern Mainline Looping: 32.69 km of 914 mm pipeline, British Columbia	39 477 000
	XG-27-92	92 07 02	Miscellaneous Projects	147 000
	XG-35-92	92 08 06	346 m of 762 mm pipeline across the Parsnip River, British Columbia	1 014 000
	XG-38-92	92 08 27	Miscellaneous Projects	512 410
	XG-39-92	92 09 10	300 m of 219.1 mm connection pipeline; Enco metering facility at Huntingdon Meter Station No. 16, British Columbia	375 000
	XG-40-92	92 09 17	845 m of 219 mm McMahon Plant Condensate Pipeline	655 000
	XG-41-92	92 10 01	Miscellaneous Projects	420 000
	XG-44-92	92 10 01	Miscellaneous Projects	1 986 000
	XG-45-92	92 06 04	Purchase and replacement of four impellers	657 000
	XG-47-92	92 10 30	3.6 km of 168.3 mm pipeline transporting gas from the West Nig field to the Jedney Pipeline, Peace River district, Alberta	1 321 000
	XG-52-92	92 12 17	Miscellaneous Projects	9 815 000

Gas

D3. Licences and Long-Term Orders to Export Natural Gas as at 31 December 1992

Exporter	Licence or Order Number	Point of Export	Term of Licence or Order		Maximum Volumes		
			From	To	Daily (10 ³ m ³)	Annual (10 ⁶ m ³)	Term (10 ⁶ m ³)
AG-Energy, L.P.	GL-182	Iroquois, Ont.	1993-09-01	1993-10-31	467.0	28.5	2 587.0
			1993-11-01	2009-10-31	467.0	170.6	
Alberta and Southern Gas Co. Ltd.	GL-99	Kingsgate, B.C.	1986-12-18	1987-10-31	31 897.2	9 340.9	77 626.5
			1987-11-01	1994-10-31	31 897.2	10 580.4	
	GL-111	Kingsgate, B.C.	1994-11-01	2005-10-31	31 900.0	10 580.5	116 385.0
Alberta Northeast Gas Ltd. and AEC Oil and Gas Company	GL-105	Iroquois, Ont.	1988-11-01	1992-10-31	399.0	146.4	2 714.0
			1992-11-01	2008-02-28	533.0	194.7	
Alberta Northeast Gas Ltd. and ATCOR Ltd.	GL-104	Iroquois, Ont.	1988-11-01	1992-10-31	790.0	289.9	5 428.0
			1992-11-01	2008-02-28	1 057.0	386.1	
Alberta Northeast Gas Ltd. and ProGas Limited	GL-103	Iroquois, Ont.	1988-11-01	1992-10-31	1 399.0	513.4	10 236.0
			1992-11-01	2008-02-28	1 870.0	683.0	
Alberta Northeast Gas Ltd. and TransCanada PipeLines Limited	GL-102	Iroquois, Ont.	1988-11-01	1992-10-31	5 547.0	3 035.7	42 646.0
			1992-11-01	2008-02-28	7 507.0	2 741.9	
		Niagara Falls, Ont.	1988-11-01	2004-02-28	283.3	103.4	42 646.0
Amoco Canada Petroleum Company Ltd.	GL-112	Huntingdon, B.C.	1989-07-24	1989-10-31	704.0	70.4	3 856.0
			1989-11-01	2004-10-31	704.0	257.0	
	GL-176	Emerson, Man.	Date of first deliveries for 10-year term		424.9	155.1	1 551.0
Amoco Canada Resources Limited	GL-108	Emerson, Man.	1989-03-16	1989-10-31	422.5	96.8	1 504.0
			1989-11-01	2001-10-31	422.5	154.0	
Amoco Canada Resources Limited and Consolidated Edison Company	GL-127	Niagara Falls, Ont.	1990-07-27	1990-10-31	873.0	84.7	4 728.0
			1990-11-01	2004-10-31	873.0	319.0	
B.C. Gas Inc.	GOL-9-92(a)	Huntingdon, B.C.	1992-10-01	1996-04-30	N/S	N/S	N/S
Canadian Hunter Marketing Ltd.	GL-107	Niagara Falls & Iroquois, Ont.	1990-11-01	2010-10-31	845.0	254.0	3 381.0
Canadian Hydrocarbons Marketing Inc.	GL-131	Huntingdon & Kingsgate, B.C.	1992-05-01	1992-10-31	4 524.8	832.6	23 228.0
			1992-11-01	2004-10-31	4 524.8	1 651.6	
	GL-183	Huntingdon, B.C.	1992-11-01	2002-10-31	273.9	100.0	1 000.3

D3. Licences and Long-Term Orders to Export Natural Gas as at 31 December 1992 (continued)

Exporter	Licence or Order Number	Point of Export	Term of Licence or Order		Maximum Volumes		
			From	To	Daily (10 ³ m ³)	Annual (10 ⁶ m ³)	Term (10 ⁶ m ³)
Canadian-Montana Pipe Line Company	GL-25	Aden/Cardston, Alta.	1968-11-01	1969-10-31	339.9	103.4	4 890.8
		Emerson, Man. & Niagara Falls, Ont.	1969-11-01	1991-10-31	679.9	206.8	
			1991-11-01	1993-10-31	390.9	119.0	
	GL-184	Aden, Alta	1992-11-01	2004-10-31	1 416.4	283.3	3 966.2
	GO-3-79	Reagan Field, Alta	1979-05-01	1993-12-31	30.0	10.3	105.0
Canadian Occidental Petroleum Company	GL-150	Niagara Falls, Ont.	1991-11-01	2006-10-31	991.5	362.0	5 432.0
	GL-177	Emerson, Man.	1992-11-01	2002-10-31	212.5	77.5	775.0
CanStates Gas Marketing and Transco Energy Marketing Company	GL-136	Niagara Falls, Ont.	1992-08-27	1992-10-31	2 125.0	140.3	9 307.5
			1992-11-01	2002-10-31	2 125.0	775.6	
	GL-137	Niagara Falls, Ont.	1990-11-08	1991-10-31	1 371.1	449.7	5 593.8
			1991-11-01	2000-10-31	1 371.1	459.3	
			2000-11-01	2002-10-31	1 371.1	500.4	
Canterra Energy Ltd.	GL-113	Emerson, Man.	1989-08-24	1989-10-31	424.9	29.3	2 099.1
			1989-11-01	2003-10-31	424.9	155.1	
	GL-114	Emerson, Man.	1989-08-24	1989-10-31	424.9	29.3	2 246.4
			1989-11-01	2004-10-31	424.9	155.1	
Centra Gas Ontario Inc.	GL-130(b)	Sprague, Man.	1990-07-27	1990-10-31	640.0	62.1	3 150.0
			1990-11-01	2005-10-31	640.0	210.0	
Centra Transmission Holdings Inc.	GL-30(b)	Sprague, Man.	1970-11-01	1995-10-31	1 321.8	344.0	8 498.1
Dartmouth Power Associates Ltd. Partnership	GL-164	Iroquois, Ont.	1992-11-01	2007-10-31	400.9	146.4	2 196.0
Direct Energy Marketing Limited	GL-188	Highwater, Que.	1992-10-29	1992-10-31	171.0	0.5	936.2
			1992-11-01	2006-10-31	171.0	62.4	
Encogen Four Partners	GL-152	Chippawa, Ont.	Date of 1st deliveries for 15-year term		424.9	155.1	2 326.6
FSC Resources Ltd.	GL-138	Napierville, Que.	1991-03-01	1991-10-31	1 530.0	374.9	8 376.8
			1991-11-01	2005-10-31	1 530.0	558.5	
	GL-153	Napierville, Que.	1991-11-01	2006-10-31	453.0	165.3	2 480.2
Fulton Cogeneration Associates	GL-154	Niagara Falls Ont.	1992-08-27	1992-10-31	170.0	11.2	868.0
			1992-11-01	2005-10-31	170.0	62.0	

Gas

D3. Licences and Long-Term Orders to Export Natural Gas as at 31 December 1992 (continued)

Exporter	Licence or Order Number	Point of Export	Term of Licence or Order		Maximum Volumes		
			From	To	Daily (10 ³ m ³)	Annual (10 ⁶ m ³)	Term (10 ⁶ m ³)
Husky Oil Operations Ltd.	GL-144	Cornwall, Ont.	1992-08-01	2008-10-31	566.6	52.1	3 154.0
			1992-11-01	2007-11-01	566.6	206.8	
	GL-185	Huntingdon, B.C.	Date of 1st deliveries for 17-year term		366.2	133.7	2 306.6
					366.1	22.3	
Imperial Oil Resources	GL-151	Iroquois, Ont.	1991-11-01	2006-10-31	991.5	362.0	5 432.0
Indeck Gas Supply Corporation	GL-133	Niagara Falls, Ont.	1990-07-27	1990-10-31	810.0	78.6	3 500.0
			1990-11-01	2005-10-31	810.0	293.0	
	GL-155	Chippawa, Ont.	Date of 1st deliveries for 15-year term		459.0	168.0	2 439.0
GL-156	Chippawa, Ont.		Date of 1st deliveries for 15-year term		210.0	73.0	852.0
Kamine Carthage Cogen Co., Inc.	GL-158	Chippawa, Ont.	1991-11-01	2006-10-31	402.2	139.5	2 093.7
Kamine South Glens Falls Cogen Co., Inc.	GL-159	Emerson, Man.	1991-11-01	2006-10-31	402.3	139.5	2 093.7
KannGaz Producers Ltd.	GL-77	Niagara Falls, Ont.	1987-11-01	1996-10-31	3 540.0	1 292.1	13 567.0
			1996-11-01	1997-10-31	2 655.0	969.1	
			1997-11-01	1998-10-31	1 770.0	646.0	
			1998-11-01	1999-10-31	885.0	323.0	
L&J Energy Systems Inc.	GL-148	Iroquois, Ont.	Date of 1st deliveries for 12-year term		329.6	92.6	1 455.6
					329.6	121.3	
Mobil Oil Canada	GL-145	Huntingdon, B.C.	1991-01-24	1991-10-31	327.5	92.0	1 195.5
			1991-11-01	2000-10-31	327.5	119.5	
	GL-146	Huntingdon, B.C.	1991-01-24	1991-10-31	136.5	38.4	1 145.6
			1991-11-01	1992-10-31	136.5	49.8	
			1992-11-01	1995-10-31	272.9	99.6	
			1995-11-01	2000-10-31	409.4	149.4	
	GL-147	Huntingdon, B.C.	1991-01-24	1991-10-31	272.9	76.7	1 843.0
			1991-11-01	1992-10-31	272.9	99.6	
			1992-11-01	2003-10-31	409.4	149.4	
	GL-165	Emerson, Man.	1992-04-30	1992-10-31	563.5	103.7	2 056.9
			1992-11-01	2000-10-31	563.5	205.7	

Gas

D3. Licences and Long-Term Orders to Export Natural Gas as at 31 December 1992 (continued)

Exporter	Licence or Order Number	Point of Export	Term of Licence or Order		Maximum Volumes		
			From	To	Daily (10 ³ m ³)	Annual (10 ⁶ m ³)	Term (10 ⁶ m ³)
New England Power Co.	GL-160	Iroquois, Ont.	1991-11-01	2006-11-01	1 700.0	621.0	9 308.0
Norcen Energy Resources Limited	GL-115	Emerson, Man.	1989-08-24	1989-10-31	396.6	27.4	1 841.0
			1989-11-01	2001-10-31	396.6	144.5	
	GL-116	Emerson, Man.	1990-05-03	1990-10-31	184.1	33.5	1 034.0
			1990-11-01	1994-10-31	184.1	67.2	
			1994-11-01	2001-10-31	283.3	104.8	
North Canadian Oils Ltd.	GL-142	Emerson, Man.	1990-11-08	1991-10-31	283.3	101.4	1 068.8
			1991-11-01	2000-10-31	283.3	103.4	
	GL-143	Emerson, Man.	1990-11-08	1991-10-31	283.3	101.4	1 068.8
			1991-11-01	2000-10-31	283.3	103.4	
Northern Minnesota Utilities	GL-171	Sprague, Man.	1992-04-30	1992-10-31	917.8	168.9	3 685.0
			1992-11-01	2002-10-31	917.8	335.0	
Northridge Petroleum Marketing Inc.	GOL-03-92 (c)	Emerson, Man.	1992-03-01	2012-02-29	N/S	N/S	N/S
Pan-Alberta Gas Ltd.	GL-95	Emerson, Man. & Niagara Falls, Ont. combined maximum	1987-11-01	1996-10-31	4 332.5	1 581.4	16 604.7
			1996-11-01	1997-10-31	3 249.4	1 186.0	
			1997-11-01	1998-10-31	2 166.2	790.7	
			1998-11-01	1999-10-31	1 083.1	395.4	
		Maximum permitted at Niagara Falls, Ont. as part of combined Emerson/ Niagara Falls volumes	1987-11-19	1996-10-31	1 442.7	526.6	
			1996-11-01	1997-10-31	1 082.1	394.9	
			1997-11-01	1998-10-31	721.3	263.3	
			1998-11-01	1999-10-31	360.7	131.7	
	GL-97	Monchy, Sask.	1984-12-20	1985-10-31	24 928.5	7 582.8	75 296.7
			1985-11-01	2001-10-31	24 928.5	8 294.4	
	GL-106	Kingsgate, B.C.	1988-11-01	2012-10-31	7 478.6	2 488.3	59 719.2
Pawtucket Power Associates Limited Partnership	GL-149	Iroquois, Ont.	1991-11-01	2006-10-31	362.5	132.4	1 986.0
Petro-Canada Inc.	GL-186	Huntingdon, B.C.	Date of 1st deliveries for 17-year term		409.6	150.0	2 580.9
Poco Petroleum Ltd.	GL-117	Emerson, Man	1989-08-24	1989-10-31	708.2	48.9	2 843.5
			1989-11-01	1990-11-07	708.2	258.5	
			1990-11-08	1991-10-31	424.9	152.1	
			1991-11-01	2000-10-31	424.9	155.1	

Gas

D3. Licences and Long-Term Orders to Export Natural Gas as at 31 December 1992 (continued)

Exporter	Licence or Order Number	Point of Export	Term of Licence or Order		Maximum Volumes		
			From	To	Daily (10 ³ m ³)	Annual (10 ⁶ m ³)	Term (10 ⁶ m ³)
ProGas Limited	GL-118	Emerson, Man.	1989-08-24	1989-10-31	708.2	48.9	2 715.3
			1989-11-01	1990-11-07	708.2	258.5	
			1990-11-08	1991-10-31	424.9	152.1	1 629.2
			1991-11-01	1992-10-28	424.9	153.8	
			1992-10-29	1992-10-31	424.9	1.3	2 248.9
			1992-11-01	2004-10-31	424.9	155.1	
	GL-173	Huntingdon, B.C.	1992-06-11	1992-10-31	424.9	60.8	1 138.4
			1992-11-01	2000-10-31	424.9	155.1	
			2000-11-01	2001-08-11	424.9	120.7	
	GL-174	Huntingdon & Kingsgate, B.C.	1992-06-11	1992-10-31	566.6	81.0	1 583.0
			1992-11-01	2000-10-31	566.6	206.8	
			2000-11-01	2001-06-10	566.6	126.4	
	GL-98	Emerson, Man & Monchy, Sask. combined maximum	1986-08-13	1986-10-31	9 440.9	2 583.2	35 492.8
			1986-11-01	1987-10-31	7 552.7	2 480.0	
			1987-11-01	2000-10-31	9 440.9	3 100.0	
		Maximum permitted at Monchy, Sask. as part of combined Emerson/Monchy volumes	1986-08-13	1986-10-31	6 797.4	2 480.0	17 746.4
			1986-11-01	1987-10-31	3 776.3	1 240.0	
			1987-11-01	2000-10-31	4 720.4	1 550.0	
	GL-101	Niagara Falls, Ont.	1989-05-01	1989-10-31	1 420.0	260.6	10 340.0
			1989-11-01	2009-10-31	1 420.0	517.0	
	GL-109	Niagara Falls & Iroquois, Ont.	1991-05-01	1991-10-31	708.2	130.3	5 170.0
			1991-11-01	2011-10-31	708.2	258.5	
	GL-129	Niagara Falls, Ont.	1990-07-27	1990-10-31	2 861.1	277.5	15 665.3
			1990-11-01	1992-10-31	2 861.1	1 044.3	
			1992-11-01	2006-10-31	2 521.1	920.2	
	GL-161	Iroquois, Ont.	1992-11-01	2010-10-31	708.2	258.5	4 800.4
			2010-11-01	2011-04-30	708.2	128.2	
	GL-178	Niagara Falls, Ont.	1992-11-01	2007-10-31	339.9	124.1	1 861.1
	GL-179	Emerson, Man.	1992-11-01	2002-11-31	212.5	77.5	775.5
Ramaro Resources Inc.	GL-139	Niagara Falls, Ont.	1990-11-08	1991-10-31	169.0	60.5	925.5
			1991-11-01	2005-10-31	169.0	61.7	
Selkirk Cogen Partners, L.P.	GL-157	Iroquois, Ont.	1992-11-01	2007-10-31	651.5	237.8	3 685.9
			2007-11-01	2008-04-30	651.5	117.9	

D3. Licences and Long-Term Orders to Export Natural Gas as at 31 December 1992 (continued)

Exporter	Licence or Order Number	Point of Export	Term of Licence or Order		Maximum Volumes		
			From	To	Daily (10 ³ m ³)	Annual (10 ⁶ m ³)	Term (10 ⁶ m ³)
Shell Canada Limited	GL-100	Highwater, Que	1987-11-01	1998-10-31	1 110.0	300.0	5 900.0
			1998-11-01	1999-03-31	1 110.0	167.6	
		Iroquois, Ont.	1991-04-11	1991-10-31	1 390.0	283.6	5 900.0
			1991-11-01	1998-10-31	1 390.0	400.0	
			1998-11-01	1999-03-31	1 390.0	209.9	
	GL-119	Emerson, Man.	1989-08-24	1989-10-31	424.9	29.3	2 234.0
			1989-11-01	2003-10-31	424.9	155.1	
	GL-120	Emerson, Man.	1989-08-24	1989-10-31	424.9	29.3	2 250.0
			1989-11-01	2004-10-31	424.9	155.1	
	GL-134	Niagara Falls, Ont.	1990-07-27	1990-10-31	450.0	43.7	2 755.0
			1990-11-01	2010-10-31	450.0	145.0	
			2010-11-01	2011-08-31	450.0	95.9	
	GL-180	Monchy, Sask.	1992-08-27	1992-10-31	278.0	18.3	1 014.0
			1992-11-01	2001-10-31	278.0	102.0	
			2001-11-01	2002-08-26	278.0	83.1	
	GL-181	Monchy, Sask.	1992-08-27	1992-10-31	580.0	38.3	3 181.0
			1992-11-01	2006-10-31	580.0	212.0	
			2006-11-01	2007-08-26	580.0	173.4	
TransCanada PipeLines Limited	GL-42(d)	Emerson, Man.	1971-04-15	1971-10-31	N/S	232.8	60 316.5
			1971-11-01	1994-10-31	N/S	2 612.3	
	GL-83	Niagara Falls, Ont.	1984-11-01	1986-10-31	1 133.1	414.0	16 371.0
			1986-11-01	2002-10-31	2 620.3	959.0	
			2002-11-01	2003-01-15	2 620.3	199.1	
	GL-84	Niagara Falls, Ont.	1987-11-01	1988-10-31	142.0	51.8	2 378.0
			1988-11-01	1997-10-31	708.0	258.4	
	GL-86	Emerson, Man.	1987-11-01	1990-10-31	2 832.8	1 034.0	10 886.4
			1990-11-01	1991-10-31	2 832.8	1 036.8	
			1991-11-01	1994-10-31	2 832.8	1 034.0	
			1994-11-01	1995-10-31	2 832.8	1 036.8	
			1995-11-01	1996-10-31	2 832.8	1 034.0	
			1996-11-01	1997-10-31	2 188.7	798.9	
			1997-11-01	1998-10-31	1 416.4	517.0	
			1998-11-01	1999-10-31	708.2	259.2	

Gas

D3. Licences and Long-Term Orders to Export Natural Gas as at 31 December 1992 (continued)

Exporter	Licence or Order Number	Point of Export	Term of Licence or Order		Maximum Volumes		
			From	To	Daily (10 ³ m ³)	Annual (10 ⁶ m ³)	Term (10 ⁶ m ³)
Unigas Corporation	GL-87	Emerson, Man.	1987-11-01	1990-10-31	2 832.8	1 034.0	10 886.4
			1990-11-01	1991-10-31	2 832.8	1 036.8	
			1991-11-01	1994-10-31	2 832.8	1 034.0	
			1994-11-01	1995-10-31	2 832.8	1 036.8	
			1995-11-01	1996-10-31	2 832.8	1 034.0	
			1996-11-01	1997-10-31	2 188.7	798.9	
			1997-11-01	1998-10-31	1 416.4	517.0	
			1998-11-01	1999-10-31	708.2	259.2	
	GL-110	Niagara Falls & Iroquois, Ont	1991-05-01	1991-10-31	708.2	130.3	5 443.2
			1991-11-01	2012-10-31	708.2	258.5	
	GL-121	Emerson, Man.	1989-08-24	1989-10-31	424.9	29.3	2 326.5
			1989-11-01	2003-10-31	424.9	155.1	
	GL-122	Emerson, Man.	1989-08-24	1989-10-31	424.9	29.3	2 326.5
			1989-11-01	2004-10-31	424.9	155.1	
	GL-187	Emerson, Man.	1992-08-27	1992-10-31	2 785.0	183.8	12 035.0
			1992-11-01	2005-10-31	2 785.0	875.0	
	GOL-2-91(e)	Emerson, Man.	1991-11-01	2005-10-31	N/S	N/S	N/S
	GL-162	Chippawa, Ont.	Date of 1st deliveries for 10-year term		453.2	165.5	1 654.2
	GL-166	Monchy, Sask.	1992-04-30	1992-10-31	2 820.0	518.9	10 300.0
			1992-11-01	2001-11-01	2 820.0	1 030.0	
	GOL-18-92(f)	Huntingdon & Kinsgate, B.C.	1992-10-01	2002-09-15	N/S	N/S	N/S
	GOL-19-92(g)	Monchy, Sask. & St.Clair, Ont	1992-10-01	2002-09-15	N/S	N/S	N/S
	GOL-20-92(h)	Emerson, Man. & St. Clair, Ont.	1992-10-01	2002-09-15	N/S	N/S	N/S
	GOL-21-92(i)	Cardston, Alta	1992-10-01	2002-09-15	N/S	N/S	N/S
Vector/7 Producers	GL-140	Niagara Falls, Ont.	1990-11-08	1991-10-31	892.3	319.6	5 025.6
			1991-11-01	2005-10-31	892.3	325.8	
Western Gas Marketing Limited	GL-128	Cornwall, Ont.	1990-07-27	1990-10-31	331.0	32.1	1 820.0
			1990-11-01	2005-10-31	331.0	121.3	
	GL-141	Emerson, Man.	1990-11-08	1991-10-31	424.9	152.1	2 326.5
			1991-11-01	2005-10-31	424.9	155.1	

Gas

D3. Licences and Long-Term Orders to Export Natural Gas as at 31 December 1992 (continued)

Exporter	Licence or Order Number	Point of Export	Term of Licence or Order		Maximum Volumes		
			From	To	Daily (10 ³ m ³)	Annual (10 ⁶ m ³)	Term (10 ⁶ m ³)
	GL-163	Niagara Falls, Ont.	Date of 1st deliveries for 15-year term		283.0	103.7	1 552.0
	GL-167	Emerson, Man.	1992-05-01	1992-10-31	1 346.0	247.7	4 920.0
			1992-11-01	2001-10-31	1 346.0	492.0	
	GL-168	Emerson, Man.	1992-05-01	1992-10-31	1 416.0	85.2	850.0
			1992-11-01	1995-10-31	1 416.0	170.0	
			1995-11-01	1996-03-31	1 416.0	70.3	
	GL-169	Monchy, Sask	1992-05-01	1992-10-31	708.0	130.3	2 590.0
			1992-11-01	2001-10-31	708.0	259.0	
	GL-170	Emerson, Man.	1992-05-01	1992-10-31	283.0	52.1	978.2
			1992-11-01	2000-10-31	283.0	103.0	
			2000-11-01	2001-05-01	283.0	51.2	
	GL-172	Philipsburg, Que.	1992-04-30	1992-10-31	906.0	166.7	4 980.0
			1992-11-01	2006-10-31	906.0	332.0	
	GL-175	Iroquois, Ont.	1992-08-27	1992-10-31	1 445.0	95.4	7 910.0
			1992-11-01	2005-10-31	1 445.0	529.0	

a - This order authorizes an export of natural gas near Huntingdon, B.C., for storage in the U.S. and for subsequent import through exchange arrangements with other exporters

b - This licence authorizes an export of natural gas near Sprague, Manitoba for subsequent import near Rainy River, Ont.

c - This order authorizes export near Emerson, Man. for subsequent import near Sarnia and St. Clair, Ont.

d - This licence authorizes an export of natural gas near Emerson, Man. for import near Sault Ste. Marie and Sarnia, Ont., to serve the eastern Canadian markets.

e - This order authorizes an export of natural gas near Emerson, Man. for import near Sault Ste. Marie and Sarnia, Ont., to serve the eastern Canadian markets.

f - This order authorizes an export of natural gas near Huntingdon and Kingsgate, B.C. for subsequent import near Huntingdon, B.C.

g - This order authorizes an export of natural gas near Monchy and St. Clair for subsequent import near St. Clair and Windsor Ont.

h - This order authorizes an export of natural gas near Emerson and St. Clair for subsequent import near St. Clair and Windsor Ont.

i - This order authorizes an export of natural gas near Cardston, Alta. for subsequent import near Willow Creek, Sask.

N/S Not Specified

Gas

D4. Licences and Long-Term Orders to Import Natural Gas as at 31 December 1992

Importer	Licence or Order Number	Point of Import	Term of Licence or Order		Maximum Volumes		
			From	To	Daily (10 ³ m ³)	Annual (10 ⁶ m ³)	Term (10 ⁶ m ³)
Canadian Western Natural Gas Company Limited	GO-117-88	Coutts, Alta	1989-01-01	2005-12-31	30.0	0.0	0.0
Centra Gas Ontario Inc.	GL-130(a)	Rainy River, Ont.	1990-07-27	1990-10-31	640.0	62.1	3 150.0
			1990-11-01	2005-10-31	640.0	210.0	
Centra Gas Transmission Holdings Inc.	GL-30(a)	Rainy River, Ont.	1970-11-01	1995-10-31	1 321.8	344.0	8 498.1
Coastal Gas Marketing	GOL-1	Sarnia & Windsor, Ont.	1991-02-07	2016-02-06	N/S	N/S	N/S
Enron Gas Marketing	GOL-26-92	Willow Creek, Sask.	1992-11-06	2004-11-05	N/S	N/S	N/S
National Steel Corporation	GOL-28-92	Windsor, Ont.	1992-12-18	1996-12-17	N/S	N/S	N/S
Northern Minnesota Utilities	GOL-17-92	Rainy River, Ont.	1992-12-01	2002-10-31	N/S	N/S	N/S
Northern Natural Gas Company	GOL-14-92	Willow Creek, Sask.	1992-11-01	1997-12-31	N/S	N/S	N/S
Rochester Gas and Electric Corporation	GOL-12-92	Sarnia, Ont.	1993-11-01	2008-10-31	N/S	N/S	N/S
Tennessee Gas Pipeline Company	GOL-11-92	St.Clair, Ont.	1992-11-01	2002-09-30	N/S	N/S	N/S
TransCanada PipeLines Limited	GL-42(b)	Sault Ste. Marie & Sarnia, Ont.	1971-04-15	1971-10-31	N/S	232.8	60 316.5
			1971-11-01	1994-10-31	N/S	2 612.3	
Unigas Corporation	GOL-22-92	St.Clair & Windsor, Ont.	1992-10-01	2002-09-15	N/S	N/S	N/S

a - This licence authorizes an import of natural gas near Huntingdon, B.C. which the licensee has exported near Sprague, Man.

b - This licence authorizes an import of natural gas near Sault Ste. Marie and Sarnia, Ont., to serve eastern Canadian markets, which the licensee has previously exported near Emerson, Man.

N/S Not specified

Gas

D5. Licences and Long-Term Orders to Export and/or Import Propane, Butanes, Ethane and Ethylene as at 31 December 1992 (Cubic Metres)

Exporter	Licence or Order	Points of		Term of Licence or Order		Maximum Volumes	
	Number	Export	Import	From	To	Annual (m³)	Term (m³)
PROPANE							
Amoco Canada Petroleum Company Ltd. (Export)	GL-32	Can/US Border (a)		1971-01-01	1972-12-31	92 698	4 281 799
				1973-01-01	1973-12-31	569 761	
				1974-01-01	1974-12-31	519 682	
				1975-01-01	1975-12-31	506 190	
				1976-01-01	1976-12-31	483 571	
				1977-01-01	1977-12-31	456 825	
				1978-01-01	1993-12-31	92 698	
				1994-01-01	1994-12-31	77 206	
Dome Petroleum Limited (Export)	GL-31	Can/US Border (a)		1971-01-01	1972-12-31	133 254	9 757 486
				1973-01-01	1973-12-31	924 999	
				1974-01-01	1974-12-31	870 078	
				1975-01-01	1975-12-31	847 301	
				1976-01-01	1976-12-31	812 936	
				1977-01-01	1977-12-31	775 793	
				1978-01-01	1978-12-31	744 761	
				1979-01-01	1979-12-31	716 983	
				1980-01-01	1980-12-31	688 571	
				1981-01-01	1981-12-31	656 190	
				1982-01-01	1982-12-31	620 476	
				1983-01-01	1986-12-31	133 254	
				1987-01-01	1987-12-31	143 809	
				1988-01-01	1988-12-31	193 016	
				1989-01-01	1989-12-31	196 984	
				1990-01-01	1990-12-31	169 047	
				1991-01-01	1991-12-31	165 873	
				1992-01-01	1992-12-31	165 079	
				1993-01-01	1993-12-31	162 098	
				1994-01-01	1994-12-31	103 968	
ETHANE							
Dome Petroleum Limited (Export)	GL-31 (b)(c)	Export-Elmore, Sask.	1979-06-21	1979-12-31	1 287 000	19 069 000	
		Windsor, Ont.	1980-01-01	1980-12-31	1 090 000		
		Re-Export - Windsor, Ont.	1981-01-01	1981-12-31	935 000		
			1982-01-01	1982-12-31	1 114 000		
			1983-01-01	1983-12-31	1 241 000		
			1984-01-01	1984-12-31	1 424 000		
			1985-01-01	1985-12-31	2 000 000		
			1986-01-01	1986-12-31	2 731 000		
			1987-01-01	1987-12-31	2 304 000		
			1988-01-01	1988-12-31	1 891 000		
			1989-01-01	1989-12-31	1 301 000		
			1990-01-01	1990-12-31	765 000		
			1991-01-01	1991-12-31	602 000		
			1992-01-01	1992-12-31	280 000		
			1993-01-01	1993-12-31	104 000		
ETHYLENE							
Dow Chemical of Canada Limited (Export/Import)	EYL-2-76 (d)	Elmore, Sask. Windsor, Ont.	1978-01-01	1997-12-31	181 438 810	N/S	

a - For each licence or order, the Canada/US Border export points include one or more of the following ports: Elmore, Sask., Gretna, Man., Sarnia and Windsor Ont.

b - This is an export licence which authorizes the export of ethane at Elmore, Sask., and Windsor Ont. All or a quantity of ethane exported at Elmore, Sask., may be imported at Windsor Ont., for subsequent re-export at Windsor Ont.

c - Authorized exports of ethane in each year during the period 1982-01-01 to 1985-12-31 shall be reduced by the equivalent quantity of "make-up" volumes exported under licence GL-47 which is in excess of 392 728 m³.

d - This is an export licence which authorizes the export of ethylene at Elmore, Sask., and at Sarnia and Windsor Ont. All or a portion of the quantity of ethylene exported at Elmore, Sask., may be imported at Windsor Ont., for subsequent re-export at Sarnia and Windsor, Ont.

N/S Not specified

Gas

D6. Exports of Natural Gas (Million Cubic Metres)

Exporter	Licence or Order Number	1991	1992	Cumulative to 31 December 1992
Alberta and Southern Gas Co. Ltd.	GL-99	9 578.8	8 522.2	18 101.0
	GO-132-90	24.5	.0	24.5
	GO-101-91	13.3	4.6	17.9
	GO-16-92	.0	616.9	616.9
	GO-34-92	.0	297.3	297.3
Alberta Northeast Gas Ltd. & AEC Oil and Gas Co.	GL-105	.9	126.8	127.7
Alberta Northeast Gas Ltd. & ATCOR Ltd.	GL-104	1.6	246.8	248.4
Alberta Northeast Gas Ltd. & ProGas Ltd.	GL-103	3.5	434.9	438.4
Alberta Northeast Gas Ltd. & TCPL	GL-102	47.4	1 830.4	1 877.8
Altana Exploration & Roan Resources Ltd.	GO-30-91	14.2	112.6	126.8
Amerada Hess Canada Ltd.	GO-68-91	.0	6.0	6.0
	GO-51-92	.0	3.6	3.6
Amoco Canada Petroleum Company Ltd.	GL-112	174.4	142.0	316.4
	GO-78-90	20.6	.0	20.6
	GO-79-90	125.1	120.1	245.2
	GO-80-90	.0	.0	.0
	GO-11-91	192.4	197.6	390.0
Amoco Canada Resources Limited	GL-108	6.6	7.6	14.2
	GO-16-89	22.4	.0	22.4
Amoco Canada Resources Limited/ Consolidated Edison Company	GL-127	166.5	320.2	486.7
Atcor Ltd.	GO-51-90	58.7	.0	58.7
B.C. Gas Inc.	GL-123 (a)	50.2	.0	50.2
	GOL-4-92 (b)	.0	23.8	23.8
Bonus Gas Processors Corp.	GO-63-90	34.5	.0	34.5
	GO-51-91	7.1	.0	7.1
BP Resources Canada Limited	GO-24-89	11.7	.0	11.7
	GO-42-90	109.0	32.1	141.1
	GO-23-92		111.1	111.1
Brymore Gas (Canada) Inc.	GO-88-89	85.0	.0	85.0
	GO-15-90	36.0	.0	36.0
	GO-99-90	16.2	.0	16.2
	GO-141-90 (c)	33.3	16.6	49.9
	GO-58-91	77.9	.6	78.5
	GO-05-92	.0	68.3	68.3
	GOL-6-92 (d)	.0	.6	.6
Canadian Hunter Marketing Ltd.	GL-107	.0	85.9	85.9
	GO-81-90	254.7	.0	254.7
	GO-48-91	274.7	118.6	393.3
	GO-21-92		30.7	30.7
Canadian Hydrocarbons Marketing Inc.	GL-131	.0	90.3	90.3
	GL-183	.0	16.4	16.4
	GO-12-90	28.7	.0	28.7
	GO-87-90	28.0	.0	28.0
	GO-3-91	266.3	.0	266.3
	GO-79-91	90.5	530.6	621.1
	GO-47-92	.0	217.6	217.6

Gas

D6. Exports of Natural Gas (Million Cubic Metres) (continued)

Exporter	Licence or Order Number	1991	1992	Cumulative to 31 December 1992
Canadian Natural Resources Ltd.	GO-67-91	.2	8.2	8.4
Canadian Occidental Petroleum Ltd.	GL-177	.0	12.8	12.8
	GO-37-90	123.1	.0	123.1
	GO-97-91	46.5	150.0	196.5
Canadian-Montana Pipe Line Company	GL-72	251.4	46.6	298.0
	GL-184	.0	47.5	47.5
	GO-3-79	4.5	3.7	8.2
	GO-64-91	.0	84.2	84.2
CanStates Gas Marketing	GO-54-90	104.8	65.3	170.1
	GO-146-90	222.7	.0	222.7
	GO-75-91	38.0	111.0	149.0
CanStates Gas Marketing/Transco Energy Marketing Company	GL-136	.0	122.3	122.3
	GL-137	.0	327.9	327.9
	GO-95-91	42.5	63.1	105.6
Canterra Energy Ltd.	GL-113	116.3	119.5	235.8
	GL-114	105.3	124.3	229.6
	GO-70-89	41.8	.0	41.8
	GO-14-90	105.6	.0	105.6
Canwest-Gas Supply Inc.	GO-52-90	1 812.2	.0	1 812.2
	GO-24-91	457.1	2 465.5	2 922.6
Centra Gas Ontario Inc.	GL-130 (e)	142.6	162.8	305.4
	GO-37-92	.0	25.5	25.5
Centra Transmission Holdings Inc.	GL-30 (e)	246.6	62.5	309.1
	GO-70-90	8.0	.0	8.0
	GO-71-90	157.2	.0	157.2
Chevron Canada Resources Limited	GO-116-90	.2	.0	.2
	GO-117-90	5.4	.0	5.4
	GO-72-91	.0	48.3	48.3
Cibola Canada Energy Marketing Inc.	GO-59-91	.0	32.2	32.2
Coastal Gas Marketing Company	GOL-1 (c)	7.7	92.5	100.2
	GO-38-91	42.9	60.4	103.3
Continental Energy Marketing Ltd.	GO-118-90	18.3	.0	18.3
	GO-39-91	83.3	219.2	302.5
	GO-52-92	.0	32.8	32.8
Czar Resources Limited	GO-41-90	71.0	5.7	76.7
	GO-06-92	.0	44.6	44.6
Dartmouth Power Associates L.P.	GL-164	.0	16.1	16.1
	GO-53-92	.0	5.1	5.1
Dekalb Petroleum Corporation	GO-57-89	67.3	.0	67.3
	GO-34-91	91.1	33.9	125.0
Direct Energy Marketing Limited	GO-107-90	12.6	.0	12.6
	GO-22-91	11.0	.0	11.0
	GO-53-91	10.4	70.1	80.5
Encor Energy Corporation Inc.	GO-42-91	2.4	.0	2.4
Energy Marketing Exchange	GO-92-91	29.4	72.8	102.2

Gas

D6. Exports of Natural Gas (Million Cubic Metres) (continued)

Exporter	Licence or Order Number	1991	1992	Cumulative to 31 December 1992
Enron Gas Marketing	GO-126-90	105.0	75.5	180.5
Fulton Cogeneration Associates	GO-40-91	67.9	3.7	71.6
	GO-04-92	.0	94.4	94.4
Grand Valley Gas Company	GO-103-90	177.9	.0	177.9
	GO-104-90	190.3	.0	190.3
	GO-86-91	223.9	688.1	912.0
	GO-38-92	.0	171.5	171.5
Husky Oil Operations Ltd.	GO-153-89	1.8	.0	1.8
	GO-33-91	5.2	144.0	149.2
Imperial Oil Resources	GO-49-91	.0	90.2	90.2
	GO-29-92	.0	178.6	178.6
Imperial Oil Resources Ltd. and Transco Energy Marketing Company	GL-136	65.5	.0	65.5
	GO-17-91	384.0	.0	384.0
	GO-63-91	324.9	386.6	711.5
	GO-30-92	.0	128.3	128.3
Indeck Gas Supply Corporation	GL-133	151.4	174.5	325.9
	GO-133-90	31.1	.0	31.1
	GO-27-91	57.5	34.5	92.0
Indeck-Oswego Limited	GO-18-92	.0	36.8	36.8
Indeck-Yerkes Limited	GO-17-92	.0	21.1	21.1
Inland Natural Gas Marketing	GO-15-92	.0	43.4	43.4
Jonan Resource Management Inc.	GO-46-91	13.1	10.4	23.5
Kamine Carthage Cogen Co. Inc.	GO-80-91	4.9	91.1	96.0
	GO-50-92	.0	19.6	19.6
Kamine South Glens Falls Cogen Co. Inc.	GL-159	14.3	119.1	133.4
KannGaz Producers Ltd.	GL-77	258.5	421.5	680.0
	GO-45-90	502.9	262.3	765.2
	GO-26-92	.0	405.8	405.8
Kerr-McGee Canada Ltd.	GO-61-91	3.7	3.2	6.9
Many Islands Natural Gas (Canada) Limited	GL-44 (f)	463.6	430.9	894.5
Mobil Oil Canada	GL-145	50.1	110.8	160.9
	GL-146	18.1	39.3	57.4
	GL-147	29.4	53.5	82.9
	GO-129-89	1 000.3	.0	1 000.3
	GO-145-89	174.2	.0	174.2
	GO-50-90	35.5	7.2	42.7
	GO-75-90	8.0	13.8	21.8
	GO-89-91	1.1	1 164.8	1 165.9
Natural Gas Clearinghouse	GOL-02-92 (g)	.0	14.0	14.0
Niagara Gas Transmission Limited	GL-78	182.5	141.3	323.8
	GO-16-90	38.9	72.2	111.1
Norcen Energy Resources Limited	GL-115	123.5	111.6	235.1
	GL-116	54.4	59.0	113.4
	GO-23-91	.0	30.5	30.5

Gas

D6. Exports of Natural Gas (Million Cubic Metres) (continued)

Exporter	Licence or Order Number	1991	1992	Cumulative to 31 December 1992
North Canadian Oils Ltd.	GL-142	25.1	74.8	99.9
	GL-143	17.3	54.9	72.2
	GO-69-89	137.4	.0	137.4
	GO-61-90	327.2	345.5	672.7
	GO-55-91	149.2	248.9	398.1
	GOL-01-92 (g)	.0	2.3	2.3
Northern Minnesota Utilities/WGML	GL-171	.0	84.9	84.9
	GOL-3-91 (h)	39.4	109.6	149.0
	GO-88-91	38.2	104.4	142.6
	GOL-10-92 (i)	.0	68.7	68.7
Northern Minnesota Utilities/Warroad	GO-66-91	1.0	2.1	3.1
Northern Natural Gas Company.	GO-14-92 (j)	.0	90.9	90.9
Northridge Petroleum Marketing, Inc.	GO-72-90	8.2	7.6	15.8
	GO-1-91 (k)	155.1	23.2	178.3
	GO-15-91	102.7	1.9	104.6
	GO-08-92	.0	40.3	40.3
	GOL-03-92 (l)	.0	132.3	132.3
Northwest Pacific Energy Marketing Inc.	GO-122-90	187.2	128.6	315.8
Pan-Alberta Gas Ltd.	GL-97	7 268.2	7 105.2	14 373.4
	GL-106	2 224.5	2 295.0	4 519.5
	GO-67-89	35.7	.0	35.7
	GO-13-91	372.5	1 468.0	1 840.5
Pawtucket Power Associates L.P.	GO-54-92	.0	.2	.2
Petro-Canada Inc.	GO-105-90	310.0	.0	310.0
	GO-76-91	3.1	.0	3.1
	GO-93-91	63.0	364.1	427.1
Poco Petroleums Ltd.	GL-117	116.1	116.6	232.7
	GL-118	94.4	144.3	238.7
	GL-173	.0	28.7	28.7
	GL-174	.0	64.4	64.4
	GO-53-89	22.9	.0	22.9
	GO-54-89	.0	.0	.0
	GO-13-90	472.1	10.2	482.3
	GO-123-90	568.8	455.7	1 024.5
	GO-44-91	33.5	.0	33.5
	GO-02-92	.0	178.2	178.2
ProGas Limited	GL-98	1 040.7	1 503.2	2 543.9
	GL-101	474.4	524.6	999.0
	GL-109	43.2	263.7	306.9
	GL-129	105.3	790.5	895.8
	GL-161	.0	42.5	42.5
	GL-178	.0	12.5	12.5
	GL-179	.0	12.5	12.5
	GO-118-89	322.7	.0	322.7
	GO-127-89	32.4	.0	32.4
	GO-24-90	137.8	.0	137.8
	GO-57-91	362.9	1 053.6	1 416.5
Ramaro Resources Inc.	GL-139	10.2	50.3	60.5
Renaissance Energy Ltd.	GO-9-91	2.1	.0	2.1
Sceptre Resources Limited	GO-69-91	5.5	1.6	7.1

Gas

D6. Exports of Natural Gas (Million Cubic Metres) (continued)

Exporter	Licence or Order Number	1991	1992	Cumulative to 31 December 1992
Selkirk Cogen Partners, L.P.	GL-157	.0	35.7	35.7
Shell Canada Limited	GL-100	236.1	214.7	450.8
	GL-119	119.3	117.2	236.5
	GL-120	111.5	154.8	266.3
	GL-134	24.1	65.1	89.2
	GL-180	.0	29.4	29.4
	GL-181	.0	61.7	61.7
	GO-63-89	.0	.0	.0
	GO-9-90	7.0	.0	7.0
	GO-28-90	363.1	.0	363.1
	GO-39-90	62.1	.0	62.1
	GO-12-91	104.8	.0	104.8
	GO-94-91		584.0	584.0
St. Lawrence Gas Company, Inc.	GO-44-92	.0	33.4	33.4
Suncor Inc.	GO-29-89	66.4	.0	66.4
	GO-39-89	2.4	.0	2.4
	GO-26-91	248.1	521.6	769.7
Tarpon Gas Marketing Ltd.	GO-10-90	12.5	.0	12.5
	GO-73-90	8.1	.0	8.1
	GO-142-90	15.9	.0	15.9
	GO-36-91	144.7	159.3	304.0
Tenngasco Corporation	GOL-7-92 (m)	.0	3.9	3.9
TransCanada PipeLines Limited	GL-21 (n)	6 107.3	.0	6 107.3
	GL-42 (n)	1 334.6	.0	1 334.6
	GL-43	208.7	.0	208.7
	GL-83	673.1	846.8	1 519.9
	GL-84	51.7	100.2	151.9
	GL-86	39.8	162.3	202.1
	GL-87	39.8	162.3	202.1
	GL-89	.0	.0	.0
	GL-110	43.2	259.2	302.4
	GL-121	116.3	124.0	240.3
	GL-122	112.3	154.0	266.3
	GO-11-89	5.8	.0	5.8
	GO-50-89	1 517.9	.0	1 517.9
	GO-83-89	6.0	.0	6.0
	GO-108-89	158.5	.0	158.5
	GO-147-89	571.4	.0	571.4
	GOL-2-91 (o)	2 089.0	13 933.4	16 022.4
	GO-37-91	1 624.5	2 433.6	4 058.1
Unigas Corporation	GO-19-89	6.4	.0	6.4
	GO-93-89	790.6	.0	790.6
	GO-112-90	57.6	6.0	63.6
	GO-148-90	10.4	72.4	82.8
	GO-14-91	193.1	848.0	1 041.1
	GO-39-92	.0	1.5	1.5
Unocal Canada Limited	GO-144-90	2.4	.0	2.4
	GO-100-91	.0	47.5	47.5
Vancouver Island Gas Joint Venture (JV)	GO-90-91	15.9	6.0	21.9
Vector Energy Inc.	GO-78-89	295.2	.0	295.2
	GO-77-91	33.7	295.7	329.4

Gas

D6. Exports of Natural Gas (Million Cubic Metres) (continued)

Exporter	Licence or Order Number	1991	1992	Cumulative to 31 December 1992
Wainoco Oil Corporation	GO-108-90	45.3	.0	45.3
	GO-91-91	10.5	21.5	32.0
	GO-49-92	.0	6.6	6.6
Wes Cana Energy Marketing Inc.	GO-54-91	11.8	113.5	125.3
Westcoast Energy Marketing Ltd.	GL-131	326.7	95.1	421.8
Western Gas Marketing Limited	GL-128	26.6	90.0	116.6
	GL-141	25.9	155.2	181.1
	GL-163	.0	17.0	17.0
	GL-167	.0	316.8	316.8
	GL-169	.0	87.1	87.1
	GL-170	.0	34.4	34.4
	GL-172	.0	13.4	13.4
	GL-175	.0	109.4	109.4
	GO-66-90	2 755.4	2 332.4	5 087.8
	GO-95-90	199.4	28.2	227.6
	GO-16-91	961.9	1 667.5	2 629.4
Western Gas Services Ltd.	GO-104-91	113.0	1 786.9	1 899.9
GROSS EXPORTS		58 515.3	71 237.5	129 752.8
NET EXPORTS(p)		47 845.9	56 069.5	103 915.4

a - This licence authorizes an export of natural gas for storage in the U.S. and for subsequent import near Huntingdon, B.C.

b - This order authorizes an export of natural gas near Huntingdon, B.C. for storage in the U.S. and for subsequent import through exchange arrangements with other exporters.

c - This order authorizes an export of natural gas near Niagara Falls, Ont. which the holder has previously imported near Sarnia, Ont.

d - This order authorizes an export of natural gas near St. Clair, Ont. which the holder has previously imported near Sarnia, Ont.

e - This licence authorizes an export of natural gas near Sprague, Man. for subsequent import near Rainy River, Ont.

f - This licence authorizes an export of natural gas near Emerson, Man. which the licensee has imported pursuant to Licence GLI-5.

g - This order authorizes an export of natural gas near Iroquois and Niagara Falls, Ont. which the holder has previously imported near Windsor, Ont.

h - This order authorizes an export of natural gas near Sprague, Man. for subsequent import near Rainy River, Ont.

i - This order authorizes an export of natural gas near Fort Francis, Ont. which the holder previously imported near Rainy River, Ont.

j - This order authorizes an export of natural gas near Emerson, Man. which the holder previously imported near Willow Creek, Sask.

k - This order authorizes an export of natural gas near Emerson, Man. for subsequent import near St. Clair, Ont. pursuant to Orders GO-106-90 and GO-29-91.

l - This order authorizes an export of natural gas near Emerson, Man. for subsequent import near Sarnia and St. Clair, Ont.

m - This order authorizes an export of natural gas near Niagara Falls, Ont. which the holder has previously imported near Ojibway, Ont.

n - This licence authorizes an export of natural gas near Emerson, Man. for subsequent import near Sault Ste. Marie and Sarnia, Ont. to serve eastern Canadian markets.

o - This order authorizes an export of natural gas near Emerson, Man. for subsequent import near Sault Ste. Marie and Sarnia, Ont.

p - Excludes volumes of licences/orders under footnotes. 2

Gas

D7. Natural Gas Exports by Export Point (million cubic metres)

Export Point	1988	1989	1990	1991	1992
Kingsgate	14 270.5	14 215.3	14 518.0	14 081.5	13 456.0
Monchy	8 791.2	9 003.9	9 529.2	10 571.5	12 071.0
Emerson	6 316.4	7 096.9	8 461.3	9 645.4	10 160.0
Niagara Falls	1 840.5	1 681.4	2 545.5	5 065.2	7 013.0
Huntingdon	3 861.1	4 889.1	4 562.8	6 109.3	6 758.0
Iroquois	.0	.0	.0	101.1	4 108.0
Other	833.1	1 025.0	1 071.9	2 113.9	2 504.0
Total	35 912.8	37 911.6	40 688.7	47 687.9	56 070.0

Gas

D8. Imports of Natural Gas (Million Cubic Metres)

Importer	Licence or Order Number	1991	1992	Cumulative to 31 December 1992
B.C. Gas Inc	GL-123 (a)	33.4	11.1	44.5
	GOL-9-92	.0	6.4	6.4
Brymore Gas (Canada) Inc.	GO-135-90	3.2	14.4	17.6
	GO-141-90 (b)	46.5	16.7	63.2
	GOL-6-92 (c)	.0	.6	.6
	GO-19-92	.0	.5	.5
Canadian Western Natural Gas Company Limited	GO-60-90	.9	.0	.9
	GO-65-91	.3	.4	.7
Centra Gas Manitoba Inc.	GO-113-90	31.5	.0	31.5
	GO-18-91	10.0	22.6	32.6
Centra Gas Ontario Inc.	GL-130 (d)	142.6	162.8	305.4
	GO-138-90	22.5	.0	22.5
	GO-83-91	.0	.8	.8
Centra Transmission Holdings Inc.	GL-30 (d)	246.6	62.8	309.4
Cibola (Canada) Energy Marketing Inc.	GO-73-91	5.7	6.7	12.4
Coastal Gas Marketing Company	GOL-1 (b)	7.7	84.7	92.4
	GO-13-92	.0	28.1	28.1
Continental Energy Marketing Ltd.	GO-45-91	.4	53.2	53.6
Gaz Métropolitain, Inc	GO-48-90	14.7	.0	14.7
	GO-67-90	37.0	.0	37.0
	GO-85-91	.0	59.8	59.8
Many Islands Natural Gas (Canada) Limited	GLI-5 (e)	452.4	402.2	854.6
Natural Gas Clearinghouse	GOL-02-92 (f)	.0	14.0	14.0
North Canadian Marketing	GOL-1-92 (f)	.0	2.4	2.4
Northern Minnesota Utilities (WGML)	GOL-3-91 (g)	38.2	104.4	142.6
	GOL-10-92 (h)	.0	57.9	57.9
Northern Natural Gas Company	GOL-14-92 (i)	.0	93.0	93.0
Northridge Petroleum Marketing Inc.	GOL-03-92 (j)	.0	130.0	130.0
Progas Limited	GO-03-92	.0	167.0	167.0
Tarpon Gas Marketing Ltd.	GO-84-91	.0	13.5	13.5
Tenngasco Corporation	GOL-7-92 (k)	.0	4.1	4.1
The Consumers' Gas Company Ltd.	GO-76-90	40.4	.0	40.4
	GO-105-91	.3	.0	.3
TransCanada PipeLines Limited	GL-21 (l)	5 638.0	.0	5 638.0
	GL-42 (l)	1 334.6	.0	1 334.6
	GOL-2-91 (m)	2 089.0	13 933.4	16 022.4

Gas

D8. Imports of Natural Gas (Million Cubic Metres) (continued)

Importer	Licence or Order Number	1991	1992	Cumulative to 31 December 1992
Unigas Corporation	GO-47-90	18.4	.0	18.4
	GO-85-90	5.4	.0	5.4
	GO-35-91	.0	8.7	8.7
	GO-20-92	.0	31.6	31.6
Union Gas Limited	GO-137-90	120.0	.0	120.0
	GO-78-91	66.8	345.1	411.9
Western Gas Marketing Limited	GO-64-90	29.0	.0	29.0
	GO-97-90	.8	.0	.8
	GO-98-90	107.9	.0	107.9
Western Gas Services Ltd.	GO-103-91	32.3	1 822.7	1 855.0
GROSS IMPORTS		10 576.4	17 661.6	28 238.0
NET IMPORTS(n)		547.4	2 575.1	3 122.5

a - This licence authorizes an import of natural gas near Huntingdon, B.C. which the licensee has previously exported for storage in the U.S.

b - This order authorizes an import of natural gas near Sarnia, Ont. for subsequent export near Niagara Falls, Ont.

c - This order authorizes an import of natural gas near Sarnia, Ontario for subsequent export near St. Clair, Ont.

d - This licence authorizes an import of natural gas near Rainy River, Ont. which the licensee has previously exported near Sprague, Man.

e - This licence authorizes an import of natural gas for subsequent export near Emerson, Man. pursuant to Licence GL-44.

f - This order authorizes the import of natural gas near Windsor, Ont. for subsequent export near Iroquois and Niagara Falls, Ont.

g - This order authorizes an import of natural gas near Rainy River, Ont. which the holder has previously exported near Sprague, Man.

h - This order authorizes an import of natural gas near Rainy River, Ont. for subsequent export near Fort Francis, Ont.

i - This order authorizes the import of natural gas near Willow Creek, Sask. for subsequent export near Emerson, Man.

j - This order authorizes the import of natural gas near Sarnia and St. Clair, Ont. which the holder has previously exported near Emerson, Man.

k - This order authorizes the import of natural gas near Ojibway, Ont. for subsequent export near Niagara Falls, Ont.

l - This licence authorizes the import of natural gas near Sault Ste. Marie and Sarnia, Ont., to serve eastern Canadian markets, which the licensee has previously exported near Emerson, Man.

m - This order authorizes an import of natural gas near Sault Ste. Marie and Sarnia, Ont. which the holder has previously exported near Emerson, Man.

n - Excludes volumes of licences/orders under footnotes.

Gas

D9. Net Exports of Propane, Butanes, Ethane and Ethylene Under Licences and Orders (Cubic Metres)

Exporter	Licence or Order Number	1991	1992
PROPANE			
Amoco Canada Resources Limited	GL-32	92 698	92 700
Dome Petroleum Limited	GL-31	165 873	163 810
NET EXPORTS		258 571	256 510
ETHANE			
Amoco Canada Resources Limited	GO-43-89	307 287	N/A
Dome Petroleum Limited	GO-52-91	322 318	708 763
NET EXPORTS		629 605	708 763
ETHYLENE			
Dow Chemical of Canada Limited	EYL-2-76 (a)	0	0
NET EXPORTS		0	0

a - This licence/order authorizes an export of product for subsequent import

D10. Net Imports of Propane, Butanes, Ethane and Ethylene Under Licences and Orders (Cubic Metres)

Importer	Licence or Order Number	1991	1992
ETHANE			
Amoco Canada Resources Limited	GO-20-91	67 628	N/A
	GO-70-91	72 495	23 737
	GO-10-92	N/A	111 654
NET IMPORTS		140 123	135 391
ETHYLENE			
Dow Chemical Company of Canada	EYL-2-76	0	0
N/A	Not Applicable		

Gas

D11. Total Net Exports of Propane and Butanes (Cubic Metres)

EXPORTER	Propane		Butanes	
	1991	1992	1991	1992
	Actual	Preliminary	Actual	Preliminary
168211 Canada Limited	399 962	368 300	167 591	103 300
Amoco Canada Petroleum Company Ltd. (a)	1 803 947	1 723 400	1 150 336	951 400
Atlantic Speedy Propane Limited	5 619	4 800	N/A	N/A
Burnwell Gas of Canada Ltd.	46 900	52 700	N/A	N/A
Canadian Enterprise Gas Products Ltd.	18 671	22 700	19 340	8 000
CanPet Marketing Ltd.	38 832	127 700	27 106	21 800
CanStates Energy	43 144	21 700	64 028	53 800
Chevron Canada Resources	3 975	N/A	N/A	N/A
Commonwealth Petroleum Co.	26 391	21 800	N/A	N/A
Consumers' Co-operative Refineries Limited	1 227	3 100	717	N/A
Desticon Gas Liquids Enterprises Ltd.	682	200	1 824	6 800
Dominion Propane Corp.	1 610	3 600	N/A	N/A
Dow Chemical Canada Inc.	7 970	16 600	N/A	N/A
Elbow River Resources Ltd.	1 956	N/A	40 753	28 400
Energy Transportation Inc.	14 468	15 800	26 024	43 000
Enron Gas Liquids Canada Ltd.	20 494	53 400	5 287	4 900
Ferrellgas, Inc.	N/A	57 200	N/A	N/A
Gibson Gas Liquids Ltd.	6 939	15 300	27 630	11 700
Gulf Canada Resources Ltd.	136 024	46 100	36 017	14 500
Home Oil Company Limited	16 902	9 700	28 845	13 700
ICG Propane Inc.	16 877	14 000	N/A	N/A
Koch Hydrocarbons Canada	2 998	N/A	19 144	13 900
M-P Oils Ltd.	76 278	75 500	1 371	N/A
Midwest Products Supply Co., Inc.	N/A	1 200	N/A	N/A
Mobil Oil Canada	46 796	40 600	47 019	18 700
NGL Supply Co. Ltd.	80 236	145 500	55 858	70 800
Norcal Gas Liquids Ltd.	6 901	200	2 836	N/A
Northridge Gas Liquids Marketing Inc.	794	41 700	19 334	33 600
PanCanadian Gas Products Ltd. (a)	140 713	316 500	117 242	67 700
Petro-Canada Hydrocarbons Inc.	424 452	438 500	273 041	255 200
Petrogas Marketing Ltd.	29 080	21 400	28 845	17 700
Petromont Inc.	47 406	42 900	470	300
Petrowest Petroleum Ltd.	22 470	21 000	4 351	N/A
Shell Canada Ltd.	202 047	212 500	191 933	199 700
Stittco Energy Limited	10 322	10 600	3 159	1 000
Sunoco Inc.	16 386	N/A	14 650	N/A
Suburban Propane Ltd.	N/A	31 100	N/A	N/A
Unocal Canada Limited	478	N/A	N/A	N/A
Vision Energy	11 289	11 900	2 100	N/A
TOTAL	3 731 237	3 989 600	2 376 850	1 940 100

a - Includes net export volumes under licences.

N/A Not Applicable

APPENDIX E

Electricity

E1. Certificates and Permits Issued During 1992 in Respect to International Power Lines

Applicant	Permit No.	Issued	Comments
Roseau Electric	EPE-40	91-10-20	Authorization to extend international power line a further 7.46 kilometers.

E2. Amending Orders Issued During 1992 Relating to International Power Lines

Applicant	Order No.	Issued	Comments
Manitoba Hydro	AO-1-EC-III-16	92-08-13	Installation of one 1200 MVA, 500/230/46 kV, 3-phase autotransformer and two 500 kV circuit breakers in the 500 kV switchyard and one 230 kV circuit breaker in the 230 kV switchyard.
British Columbia Hydro and Power Authority	AO-1-EC-III-10	92-04-16	Certain changes to the terminal facilities of the international power line occasioned by the installation of a phase shifting transformer at the Nelway substation.

E3. Licences Issued During 1992 Relating to the Export of Electricity

No Licences Were Issued During 1992.

Electricity

E4. Permits and Orders Issued During 1992 Relating to the Export of Electricity

E4(a) Permits Issued

Applicant	Permit No.	Class	Annual		Term		Issued
			Kilowatts	Megawatt Hours	From	To	
British Columbia Hydro and Power Authority	EPE-41	Interruptible	-	20 000 000(a)	93-01-01	97-09-30	92-12-23
	EPE-42	Firm	2 300 000	6 000 000(b)	93-01-01	97-09-30	92-12-23
	EPE-43	Interruptible	-	20 000 000(c)	93-01-01	97-09-30	92-12-23
	EPE-44	Firm	2 300 000	6 000 000(d)	93-01-01	97-09-30	92-12-23
Boise Cascade	EPE-31	Border Accommodation	20 000	175 000	92-07-01	95-06-30	92-06-25
Canadian Niagara Power Company Limited	EPE-36	Firm	45 000	250 000	92-11-01	95-10-31	92-10-15
	EPE-37	Carrier Transfer	50 000	250 000	92-11-01	95-10-31	92-10-15
Cornwall Electric	EPE-38	Interruptible	-	15 000	92-11-01	95-10-31	92-10-23
	EPE-39	Carrier Transfer	45 000	233 000	92-11-01	95-10-31	92-10-23
Manitoba Hydro	EPE-32	Border Accommodation	12	15	92-08-01	95-07-31	92-07-09
	EPE-33	Firm	200 000	883 000	97-05-01	16-10-31	92-06-26
	EPE-34	Firm	400 000	150 000	92-11-01	14-10-31	92-06-26
	EPE-35	Firm	150 000	663 000	95-05-01	14-10-31	92-06-26

E4(b) Amending Orders Relating to Export Licences

Applicant	Order No.	Issued	Comments
British Columbia Hydro and Power Authority	AO-7-EL-162	92-08-06	Modification to the term of the licence.
	AO-6-EL-163	92-08-06	Modification to the term of the licence.
	AO-4-EL-164	92-08-06	Modification to the term of the licence.
Manitoba Hydro	AO-1-EL-100	92-10-01	Modification to the term of the licence.
	AO-2-EL-101	92-10-01	Modification to the term of the licence.
	AO-3-EL-102	92-10-01	Modification to the term of the licence.
	AO-1-EL-103	92-10-01	Modification to the term of the licence.

E4(c) Revoking Orders

No Revoking Orders Were Issued During 1992.

(a) Less actual exports under EPE-42, EPE-43 and EPE-44.

(b) Less actual exports under EPE-44.

(c) Less actual exports under EPE-41, EPE-42 and EPE-44.

(d) Less actual exports under EPE-42.

Electricity

E5. Exports 1992 (Megawatt Hours)

Exporter	Licence Number	Licence Authorization		Gross Energy Exported			Value of Export (\$)	
		Firm	Interruptible	Firm	Interruptible	Exchange(a)	Firm	Interruptible
NEW BRUNSWICK								
Fraser Inc.	EPE-07	400 000	--	326 595	--	--	18 489 911	--
Maine and New Brunswick Electrical Power Company, Limited	EL-177	200 000	--	98 854	--	--	2 641 668	--
New Brunswick Power	EL-138	876 000	--	--	--	--	--	--
	EL-150	1 138 000	--	--	--	--	--	--
	EPE-14	876 000	--	757 210	--	- 15 137	46 565 831	--
	EPE-15	--	6 482 400(b)	--	321 536	16 355	--	9 895 083
	EPE-16	--	400 000	--	155 965	3 279	--	5 588 963
	EPE-17	250 000	--	--	--	42 675	--	--
	EPE-18	--	179 000	--	5 077	- 7	--	205 787
	EPE-19	201 480	--	64 057	--	- 1 511	5 016 533	--
	EPE-28	1 000	--	552	--	--	41 916	--
TOTAL				1 247 268	482 578	45 654	72 755 859	15 689 833
QUEBEC								
Hydro-Québec	EL-151	--	11 000 000	--	--	--	--	--
	EL-152	--	23 564 000(c)	--	71 558	--	--	2 537 810
	EL-153	--	23 564 000(c)	--	1 555 126	- 87 057	--	48 555 400
	EL-154 *	11 220 000	--	--	--	--	--	--
	EL-156	25 000	--	--	--	--	--	--
	EL-165	--	3 000 000	--	--	--	--	--
	EL-166	--	4 000 000	--	--	--	--	--
	EL-167	--	6 920 000(d)	--	161 734	- 95 788	--	3 559 587
	EL-168	1 314 000	--	1 080 096	--	--	33 988 880	--
	EL-169	--	1 752 000(e)	--	25 932	- 42	--	632 507
	EL-176	9 000 000	--	5 252 178	--	--	115 847 000	--
	EL-178	3 000 000	--	--	--	214 637	21 592 140	--
	EL-179	350 000	--	205 403	--	--	10 861 217	--
	EL-181	400 000	--	362 339	--	--	23 175 681	--
	EL-182	406 000	--	111 385	--	--	8 402 958	--
	EPE-20	10 512	--	918	--	--	65 539	--
TOTAL				7 012 319	1 814 350	31 750	213 933 415	55 285 304
ONTARIO								
Boise Cascade Canada Ltd.	ELO-265*	--	175 000	--	--	--	--	--
	EPE-31	--	175 000	--	--	--	--	--
Canadian Niagara Power Company Limited	ELO-269*	--	250 000	--	--	135 186	--	--
	ELO-270*	--	200 000	--	--	3 754	--	--
	EPE-08*	225 000	--	198 845	--	--	5 398 564	--
	EPE-36	250 000	--	21 560	--	--	492 925	--
	EPE-37	250 000	--	--	--	42 149	--	--
The Canadian Transit Company	ELO-239*	25	--	--	--	--	--	--
	EPE-29	50	--	--	--	--	--	--
Cornwall Electric	ELO- 267*	--	30 000	--	12 733	--	--	340 250
	ELO- 268*	--	30 000	--	--	--	--	--
	EPE-38	--	15 000	--	--	--	--	--
	EPE-39	--	233 000	--	--	--	--	--
The Detroit and Windsor Subway Company	EPE-26	3 000	--	1 323	--	--	110 700	--
Ontario Hydro	EL-134	--	10 000 000	--	--	2 930 570	--	--
	EPE-21	--	15 000 000	--	1 778 460	135 399	--	48 383 550
	EPE-23*	1 320 000	--	42 186	--	--	4 501 572	--
	EPE-24	15 000	--	827	--	--	1 654	--
	EPE-25	200	--	8	--	--	839	--
TOTAL				264 749	1 791 193	3 247 058	10 506 254	48 723 800

Electricity

E5. Exports 1992 (Megawatt Hours) (continued)

Exporter	Licence Number	Licence Authorization		Gross Energy Exported			Value of Export (\$)	
		Firm	Interruptible	Firm	Interruptible	Exchange(a)	Firm	Interruptible
MANITOBA								
The Manitoba Hydro-Electric Board	EL-97*	—	1 800 000	—	1 576 579	—	—	21 004 384
	EL-98*	876 000	—	1 400	—	—	2 911 061	—
	EL-99	262 800	—	650	—	—	11 877	—
	EL-100	800 000	—	—	—	—	—	—
	EL-101	2 500 000	—	—	—	—	—	—
	EL-102	—	—	1 132 831	—	—	25 474 988	—
	EL-103	—	12 000 000(f)	—	3 343 027	192 145	—	46 157 267
	ELO-260*	7 899	—	—	—	—	—	—
	EPE-30	7884	—	3 255	—	—	138 744	—
	EPE-32	15	—	10	—	—	843	—
	EPE-34	1766	—	—	—	—	—	—
TOTAL				1 138 146	4 919 606	192 145	28 537 513	67 161 651
SASKATCHEWAN								
Saskatchewan Power Corporation	EL-118	438 000(g)	—	—	—	22 800	—	—
	EL-119	—	876 000(h)	—	79 485	35 825	—	1 697 229
	EL-120	876 000(h)	—	—	—	—	—	—
TOTAL				—	79 485	58 625	—	1 697 229
BRITISH COLUMBIA								
British Columbia Hydro and Power Authority	EL-162*	6 000 000	—	2 487 701	—	—	70 549 947	—
	EL-163*	—	15 000 000(i)	—	4 292 954	1 053 188	—	106 302 324
	EL-164*	—	3 000 000	—	—	342 177	—	—
	EPE-02	15 164	—	17 366	—	—	842 614	—
	EPE-27	1 200	—	530	—	—	57 369	—
	(j)	—	—	—	—	335 654	—	—
Cominco Ltd.	EPE-09	50 000	—	—	—	—	—	—
	EPE-10	250 000	—	—	—	—	—	—
	EPE-11	—	1 000 000	—	675 916	—	—	16 209 882
	EPE-12	—	1 000 000	—	—	—	—	—
West Kootenay Power and Light Company, Limited	EPE-13	50	—	15	—	—	1 199	—
TOTAL				2 505 612	4 968 870	1 731 019	71 451 129	122 512 206
TOTAL CANADA(k)				12 168 094	14 056 082	5 306 251	397 184 170	311 070 023

a - Exchange includes inadvertent and circulating flow, equichange, storage, adjustment transfer, and wheeling or carrier transfer which normally do not have associated revenue.

b - Total exports should not exceed 6 482.4 GW.h less any amounts exported pursuant to another licence or order under which the energy is transmitted over the line authorized by Certificate EC-III-8.

c - Total exports should not exceed 23 564 GW.h less any amounts exported pursuant to another licence under which the energy is transmitted over the lines authorized by Certificates EC-III-15 and EC-10.

d - Total exports should not exceed 6 920 GW.h less any amounts exported pursuant to another licence under which the energy is transmitted over the lines authorized by Certificate EC-III-21.

e - Total exports should not exceed 1 752 GW.h less any amounts exported under Licence EL-168.

f - Total exports should not exceed 12 000 GW.h less any amounts exported under Licences EL-97, EL-98, EL-99, EL-100, EL-101 and EL-102.

g - Energy to be returned.

h - Total exports under Licences EL-119 and EL-120 should not exceed 876 GW.h. when combined together.

i - Total exports should not exceed 15 000 GW.h less any amounts exported under Licence EL-162.

j - Energy exported in accordance with the Skagit River Valley Treaty which is not under the Board's jurisdiction.

k - Excludes \$6 159 977 revenue for wheeling, transmission, unit rental and storage transfer charges.

* Expired during 1992.

Electricity

E6. Electricity Trade Between Canada and the United States (a) (By Province, Gigawatt Hours)

PROVINCE	REGION / STATE	EXPORT (b)	IMPORT (c)	NET EXPORT (b) - (c)
New Brunswick	Maine	974	56	918
	Massachusetts	757		757
	Total New Brunswick	1 731	56	1 675
Quebec	Vermont	1 828	408	1 420
	New England (d)	5 413	524	4 889
	New York	1 838	441	1 397
	Total Quebec	9 079	1 373	7 706
Ontario	Vermont	11		11
	New York	1 692	38	1 654
	Michigan	84	314	- 230
	Minnesota	15	45	- 30
	Total Ontario	1 802	397	1 405
Manitoba	Minnesota	5 456		5 456
	North Dakota	602		602
	Total Manitoba	6 058		6 058
Saskatchewan	North Dakota	80	7	73
Alberta	Montana		2	- 2
British Columbia	Montana	17		17
	Washington	5 273		5 273
	Oregon	890		890
	California	1 010		1 010
	Other (e)	284		284
	Total British Columbia	7 474		7 474
TOTAL		26 224	1 835	24 389

Notes: (a) Sales and purchases only; excludes exchanges.

(b) Sales to the United States.

(c) Purchases from the United States.

(d) Trade with the New England Power Pool - quantities to each state cannot be accurately determined.

(e) Includes Idaho, Nevada and Alaska.

Electricity

E7. Electricity Trade Between the United States and Canada (a) (By American Region / State, Gigawatt Hours)

REGION / STATE	PROVINCE	IMPORT (b)	EXPORT (c)	NET IMPORT (b) - (c)
New England				
Maine	New Brunswick	974	56	918
Massachusetts	New Brunswick	757	0	757
Vermont	Quebec	1828	408	1420
	Ontario	11	0	11
New England (d)	Quebec	5413	524	4889
Total New England		8983	988	7995
New York				
	Quebec	1838	441	1397
	Ontario	1692	38	1654
Total New York		3530	479	3051
Michigan	Ontario	84	314	-230
Midwest				
Minnesota	Ontario	15	45	-30
	Manitoba	5456	0	5456
North Dakota	Manitoba	602	0	602
	Saskatchewan	80	7	73
Total Midwest		6153	52	6101
Western				
Montana	Alberta	0	2	-2
	British Columbia	17	0	17
Washington	British Columbia	5273	0	5273
Oregon	British Columbia	890	0	890
California	British Columbia	1010	0	1010
Other (e)	British Columbia	284	0	284
Total Western		7474	2	7472
TOTAL		26224	1835	24389

Notes: (a) Sales and purchases only; excludes exchanges.

(b) Purchases from Canada.

(c) Sales to Canada.

(d) Trade with the New England Power Pool - quantities to each state cannot be accurately determined.

(e) Includes Idaho, Nevada and Alaska.

APPENDIX F



Financial Regulation

F1. Financial Information - Group 1 Oil Pipeline Companies

	Cochin	Interprovincial Pipelines	IPL (NW)	Trans Mountain	Trans-Northern						
1992(a)	(\$000 000)	(%)	(\$000 000)	(%)	(\$000 000)	(%)	(\$000 000)	(%)	(\$000 000)	(%)	Total
Revenue Requirement											
Return	10.2	35.2	78.7	25.0	37.2	51.2	22.2	24.2	5.1	17.7	153.4
Depreciation	4.8	16.5	45.1	14.3	14.8	20.3	9.2	10.0	2.2	7.7	76.1
Operating & Mtce.	12.5	43.2	150.3	47.6	8.7	11.9	31.7	34.6	17.2	59.1	220.4
Taxes	1.5	5.1	41.3	13.1	12.1	16.6	28.5	31.2	4.5	15.5	87.9
TOTAL	29.0	100.0	315.4	100.0	72.8	100.0	91.6	100.0	29	100.0	537.8
Capitalization of Rate Base (b)											
Debt	N/A (c)	N/A	383.5	59.2	177.3	67.1	89	52.5	17.9	44.3	667.7
Preferred	N/A (c)	N/A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0
Common Equity	N/A (c)	N/A	264.5	40.8	86.9	32.9	80.5	47.5	22.6	55.7	454.5
TOTAL	42.8	100.0	648.0	100.0	264.2	100.0	169.5	100.0	40.5	100.0	1 112.2
Return on Common Equity											
Approved	N/A (c,d)	N/A	33.2	12.5	14.0	16.0	10.1	12.5	3.0	13.75	
Actual	10.2 (e)	28.16	38.2	14.4	14.0	16.0	12.3	15.9	3.0	13.44	
1991											
	(\$000 000)	(%)	(\$000 000)	(%)	(\$000 000)	(%)	(\$000 000)	(%)	(\$000 000)	(%)	Total
Revenue Requirement											
Return	11.00	36.30	77.9	24.9	39.1	53.8	22.3	25.4	4.6	15.9	154.9
Depreciation	5.2	17.2	42.3	13.5	14.7	20.2	8.3	9.5	2.2	7.5	72.7
Operating & Mtce.	12.7	41.9	136.8	43.7	6.8	9.3	30	34.3	18.4	63.3	204.8
Taxes	1.4	4.6	56.1	17.9	12.1	16.7	27	30.8	3.9	13.3	100.5
TOTAL	30.3	100.0	313.1	100.0	72.7	100.0	87.6	100.0	29.1	100.0	532.9
Capitalization of Rate Base (b)											
Debt	N/A (c)	N/A	387.2	59.2	190.8	68.5	81.3	50	18.6	46.3	677.9
Preferred	N/A (c)	N/A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Common Equity	N/A (c)	N/A	266.9	40.8	87.6	31.5	81.3	50	21.6	53.7	457.4
TOTAL	42.1	100.0	654.1	100.0	278.4	100.0	162.6	100.0	40.2	100.0	1 135.3
Return on Common Equity											
Approved	N/A (c,d)	N/A	36.0	13.25	14.1	16.0	11.4	14.0	2.8	13.75	
Actual	11.0 (e)	26.99	37.4	14.03	14.1	16.0	13.5	16.6	2.5	12.6	

a- Data based on preliminary estimates

b- Data exclude construction work in progress

c- Not applicable because company is financed on a joint venture basis

d- Not applicable because company regulated on a complaint basis

e- Before interest and taxes.



Financial Regulation

F2. Financial Information - Group 1 Gas Pipeline Companies

	Alta. Nat. Gas		Foothills		TQM		TransCanada		Westcoast		
1992(a)	(\$000 000)	(%)	(\$000 000)	(%)	(\$000 000)	(%)	(\$000 000)	(%)	(\$000 000)	(%)	Total
Revenue Requirement											
Return	4.9	19.5	56.3	40.1	44.6	58.1	566.2	39.0	128.4	36.5	800.4
Depreciation	1.7	6.8	20.2	14.4	13.2	17.2	176.9	12.2	39.7	11.4	251.7
Operating & Mtce.	15.5	62.2	47.4	33.8	6.9	8.9	581.9	36.7	124.8	35.5	776.5
Taxes	2.9	11.5	16.5	11.7	12.1	15.8	175.5	12.1	58.3	16.6	265.3
TOTAL	25.0	100.0	140.4	100.0	76.8	100.0	1 500.5	100.0	351.2	100.0	2 093.9

Capitilization of Rate Base (b)

Debt	32.1	69.5	447.4	60.6	249.5	75.0	2 958.9	59.6	711.6	62.2	4 399.5
Preferred	0.0	0.0	0.0	0.0	0.0	0.0	519.9	10.4	31.8	2.8	551.7
Common Equity	14.1	30.5	290.8	39.4	83.2	25.0	1 502.5	30.0	400.3	35.0	2 290.9
TOTAL	46.2	100.0	738.2	100.0	332.7	100.0	4 981.3	100.0	1 143.7	100.0	7 242.1

Return on Common Equity

Approved	N/A (c)	N/A	23.3	14.0	11.4	13.75	196.1	13.25	51.9	12.50
Actual	1.7	12.18	23.3	14.0	12.2	14.62	198.4	13.41	52.6	12.62

1991	(\$000 000)	(%)	(\$000 000)	(%)	(\$000 000)	(%)	(\$000 000)	(%)	(\$000 000)	(%)	Total
Revenue Requirement											
Return	3.2	11.5	67.4	40.0	46.1	61.9	417.6	34.2	107.6	35.2	641.9
Depreciation	1.4	4.9	19.7	11.7	13.2	17.7	138.7	11.3	32.1	10.6	205.1
Operating and Mtce.	21.3	75.1	52.1	30.9	6.8	9.1	527.8	43.1	108.8	35.8	716.8
Taxes	2.4	8.6	29.3	17.4	8.5	11.4	140.0	11.4	55.9	18.4	236.0
TOTAL	28.3	100.1	168.5	100.0	74.6	100.1	1 224.1	100.0	304.4	100.0	1 799.8

Capitilization of Rate Base (b)

Debt	17.4	65.0	396.8	56.9	259.4	75.0	2180.0	59.1	555.5	61.5	3409.2
Preferred	0.0	0.0	123.9	17.8	0.0	0.0	402.1	10.9	31.8	3.5	557.8
Common Equity	9.4	35.0	176.1	25.3	86.5	25.0	1106.6	30.0	316.2	35.0	1694.8
TOTAL	26.8	100.0	696.8	100.0	345.9	100.0	3 688.7	100.0	903.5	100.0	5 661.8

Return on Common Equity

Approved	N/A (c)	N/A	25.1	14.25	11.9	13.75	149.9	13.50	42.2	13.75
Actual	1.3	13.38	25.1	14.25	12.5	14.44	150.6	13.61	42.9	13.65

a- Based on preliminary estimates

b- Excludes construction work in progress

c- Not applicable as company is regulated on a complaint basis



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A. Boyd Gilmour	Member
Anita Côté-Verhaaf	Member
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Serving Canada's Energy Interests

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The National Energy Board seeks to discharge its statutory responsibilities in the public interest with particular attention to efficiency and economy in regulation and the application to its work of the best in modern technology.

Thus: in January 1993, the Board held a workshop on Incentive Rate Regulation, and some promising ideas arising from this session are being pursued; in October, the Board invited public comment on changes to its electricity export regulation to simplify and shorten the approval process; and in November, the Board invited public input on means to streamline the handling of pipeline facilities applications made pursuant to section 58 of the Board's Act, which do not require public hearing.

Innovative ways of facilitating the flow and processing of information between the Board and its stakeholders will be developed in the context of a major new Board initiative, electronic regulatory filing, a three-to-four year project launched in 1993.

We are as well developing an electronic bulletin board which will be accessible in the new year by anyone with a modem-equipped personal computer. Information available in this format will initially include news releases, hearing orders, the *Regulatory Agenda* and certain natural gas statistics.

The Board also wants to achieve economies by working in partnership with other regulatory agencies. At year-end the Board was about to conclude an agreement with the Alberta Energy Resources Conservation Board for the development and use of a common oil and gas reserves data base. With the same goal in view, the Board is in touch with other producing provinces.

Economy and effectiveness are reflected in the Board's steadily reducing resource requirements. This downward trend was interrupted only briefly in 1991-92 with the Board's relocation to Calgary and the transfer of responsibilities and resources from the former Canada Oil and Gas Lands Administration.

These savings have been achieved without impairing conscientious fulfilment of the Board's legislated mandate. In particular, the Board continues to ensure that the projects it reviews are carried out in an environmentally sound manner. In 1993, it performed environmental assessments on more than 170 projects submitted for approval.

We are working hard to maintain our reputation as a thoroughly up-to-date regulator of energy in the Canadian public interest. On pages 3 to 6 of this report, you will find a fuller description of the Board's role and performance in the past year.

There is widespread interest outside Canada in the design and implementation of regulatory frameworks in countries which are contemplating, or are in the process of, privatizing energy industries and deregulating investment, pricing and trade in their energy markets, particularly those for oil and gas. The Board provided briefings in 1993 for visiting officials from countries which included Argentina, Australia, Korea, Russia, Thailand and Vietnam.

Two members of the Board retired during 1993: A. Boyd Gilmour on October 1 and R. Byron Horner on November 5 after 12 years and 14 1/2 years distinguished service, respectively. Prior to his appointment to the Board in 1981, Mr. Gilmour had been a member of the Board's staff for 14 years.



R. Priddle

THE BOARD'S ROLE, RESPONSIBILITIES AND OPERATIONS

Overview

The National Energy Board ("the Board") is an independent federal regulatory tribunal established in 1959. It reports to Parliament through the Minister of Energy, Mines and Resources ("the Minister"). The name of the department will officially change to Natural Resources when legislation is enacted, likely in the spring of 1994. The Board currently consists of seven permanent members, including the Chairman and the Vice-Chairman, supported by a staff of some 300 employees who provide advice on subjects such as economics, engineering, environment, finance, geology, law and energy market developments.

The Board has all the powers vested in a superior court of record with regard to attendance at hearings, the swearing in and examination of witnesses, the production and inspection of documents, and the enforcement of its orders. Most hearings are conducted by three Members, who constitute a quorum of the Board, with one acting as Presiding Member. The Board's regulatory decisions and the reasons for them are issued as public documents.

The Board's regulatory powers under the *National Energy Board Act* ("the Act") include the granting of authorizations for:

- ♦ the export of oil, natural gas and electricity;
- ♦ the import of gas;
- ♦ the construction and operation of interprovincial and international pipelines, international power lines and designated interprovincial power lines; and
- ♦ the setting of tolls and tariffs for oil and gas pipelines.

One of the Board's responsibilities is to monitor the current and future supply of Canada's major energy commodities, and

the national and international demand for them. The Board also has specific responsibilities under the *Northern Pipeline Act* and the *Energy Administration Act*. In addition, Board inspectors have been appointed safety officers by the Minister of Labour to administer Part II of the *Canada Labour Code*.

The Board has an important advisory function and may, on its own initiative, hold inquiries and conduct studies on specific matters and prepare reports for the information of the federal government, of Parliament and of the general public. The Act requires that the Board keep under review matters relating to all aspects of energy production, development and trade which fall within the jurisdiction of the federal government. The Board also carries out studies and prepares reports at the request of the Minister.

Since 1991, the Board has assumed regulatory responsibilities under the *Canada Oil and Gas Operations Act* for oil and gas activities on Canada's frontier lands in all non-Accord areas. The Board's mandate includes the provision of expert technical advice to the Newfoundland and Nova Scotia Offshore Petroleum Boards, and to policy branches of the Department of Energy, Mines and Resources and the Department of Indian Affairs and Northern Development.

The Board receives several hundred applications annually. These range from straightforward and routine requests for orders to major applications for licences, pipeline toll orders and certificates, which may consist of thousands of pages of information. Such major applications usually relate to pipeline tolling issues, large pipeline facility expansion projects, or major applications for exports of natural gas. Those that do not involve an oral hearing are dealt with by internal processes or written public proceedings. The Board continues to take steps to simplify such processes, while at the same time seeking to maintain their essential fairness, consistency, and openness to general scrutiny.

The Board held eight oral public hearings in 1993. Three hearings dealt with toll and tariff applications, three with major pipeline facilities and two with natural gas exports. Details of these hearings may be found in the section on *Hearings, Inquiries and Reviews* beginning on page 21.

Natural Gas, Oil and Electricity Exports

The Board authorizes the export and import of natural gas through the issuance of long-term licences and short-term orders. In considering an export application, the Board must take into account section 118 of the Act. This requires that the Board satisfy itself that the quantity of gas to be exported does not exceed the surplus remaining, after due allowance has been made for the reasonably foreseeable requirements for use in Canada. Licences require approval of the Governor in Council.

During the year, the Board issued 29 new licences authorizing the export of some 95.3 billion cubic metres (3.4 trillion cubic feet) of gas over periods ranging from four to 20 years. The Board also issued 125 short-term orders authorizing the export of natural gas for periods of up to two years.

Virtually all exports of oil are made under short-term orders. In 1993, the Board issued 108 orders for the export of crude and petroleum products, 54 for the export of propane, 46 for the export of butanes and two for the export of ethane.

The Board may authorize the construction of international power lines and electricity exports by issuing permits, or by issuing certificates or licences following public hearings. No such public hearings were held during 1993. However, during the year the Board did issue 14 export permits authorizing the export of up to 17 700 gigawatt hours of electricity over periods of up to 12 years. The Board also amended the conditions of three existing licences and six permits, and

revoked one permit, all authorizing exports of electricity.

The Board monitors exports of energy and receives monthly data from exporters on volumes and prices. Consolidated reports are made available to government, industry and the general public. Data on exports of energy during 1993 are provided in Appendices C3, 4, 5 and 6 for oil; D3, and 5 for gas; and E3, 4, 5, 6 and 7 for electricity.

Pipeline Facilities

In granting a certificate or an order authorizing the construction of pipeline facilities, the Board must be satisfied that the requested facilities are - and will continue to be - required to satisfy public convenience and necessity. Certificates require approval of the Governor in Council.

The Board currently regulates the natural gas, oil and petroleum products pipelines of 59 companies. During 1993, the Board regulated in excess of 37 800 kilometres (23 500 miles) of pipeline. These pipelines are shown in Figure 13 for gas and Figure 14 for oil.

Any new pipelines or additions to pipeline facilities under the Board's jurisdiction must receive Board authorization prior to construction and operation, and public hearings must be held for all proposed pipelines exceeding 40 kilometres in length. The Board, at its discretion, will occasionally conduct a public hearing for other facilities applications when public interest considerations render it necessary.

In 1993, the Board approved the construction of some 360 kilometres (220 miles) of pipeline. Certificates and orders issued during 1993 approving new pipeline facilities are listed in Appendix C1 and 2 for oil and Appendix D1 and 2 for gas.

The Board monitors pipeline construction and operation to ensure compliance with safety regulations and any specific conditions established as part of the

applicable regulatory approval. In 1993, the Board carried out some 270 such inspections to verify compliance with the *Onshore Pipeline Regulations* and Part II of the *Canada Labour Code*. In addition, the Board implemented a comprehensive pipeline safety program to increase and systematize its pipeline monitoring and enforcement activities; to augment its follow-up of pipeline accidents; and to review and revise its regulations as appropriate. Data on the number and cause of pipeline incidents may be found on page 25 of this report, in the *Other Board Activities* section.

A Pipeline Task Force, made up of staff from both the National Energy Board and the Alberta Energy Resources Conservation Board (AERCB) was established in 1993. They will identify technical areas related to pipeline safety and environmental issues that may benefit from increased cooperation and coordination and result in a more efficient use of the resources available to each organization. It is hoped that this process will lead to a reduced regulatory burden both on the public and on the pipeline industry, through the application of consistent and compatible regulatory requirements. The Task Force will meet quarterly and will provide both Boards with progress reports.

Financial Regulation of Pipelines

The Board's mandate relating to the financial regulation of pipelines is to ensure that tolls and tariffs are just and reasonable, and that pipeline services are provided without unjust discrimination. During 1993, the Board rendered decisions on five toll applications, approving an aggregate cost of service of \$2.40 billion compared with an applied-for amount of \$2.46 billion.

For regulatory purposes, pipelines are divided into two groups: the 10 gas and oil pipeline companies with extensive systems are classified as Group 1, while those companies with less elaborate systems are classified as Group 2. The financial and operating performance

of Group 1 companies is closely monitored by the Board on a regular basis. The tolls of three Group 1 companies, namely **Alberta Natural Gas Company Ltd.**, **Cochin Pipe Lines Ltd.** and **Interprovincial Pipe Line (NW) Ltd.**, are reviewed on a complaint basis. Financial information on the Group 1 companies may be found in Appendix F, Financial Regulation. For Group 2 companies, monitoring consists primarily of examination of annual financial statements and tariff filings, combined with complaint-based toll reviews.

As part of its monitoring responsibility, the Board conducted a number of compliance audits of pipeline companies in 1993. These audits were primarily related to specific issues that had been raised in recent toll proceedings, such as economy, efficiency and cost allocation. Audit reports for **Cochin Pipe Lines Ltd.**, **Interprovincial Pipe Line Inc.** and **Westcoast Energy Inc.** were published in 1993.

A number of Group 1 pipeline companies have established joint industry task forces on tolls, tariffs and operating matters. The Board encourages such task forces, as it believes that they provide an effective means of allowing companies and parties to exchange information - and hopefully settle issues - on an informal basis, thereby reducing the number of issues to be dealt with in hearings, the amount of hearing time and therefore costs to all parties.

Environmental Matters

The Board is responsible for all environmental issues relating to its regulation of gas, oil and petroleum products pipelines; energy exports; international power lines; and frontier oil and gas activities. During 1993, it carried out environmental assessments of more than 170 projects - including research proposals, drilling programs, development plans, seismic and geological programs, and pipeline facility and energy export applications in fulfilment of obligations under the

Environmental Assessment and Review Process ("EARP") Guidelines Order, the *National Energy Board Act* and the *Canada Oil and Gas Operations Act*.

Proponents of federally-regulated energy projects are usually required to propose a socio-economic action plan, including a monitoring system, to deal effectively with impacts. The Board may set socio-economic terms and conditions as part of any approval it grants.

The Board participated extensively in the consultation process which was established for the review of the *Canadian Environmental Assessment Act* and regulations, and initiated the review and update of the provisions of several guidelines arising from the *Canada Oil and Gas Operations Act*.

Changes to the Board's environmental assessment process will be required when the *Canadian Environmental Assessment Act* is proclaimed. New components of the assessment process will include the requirement for comprehensive study and mediation, as well as the requirement to maintain an ongoing public registry of all documents relevant to the assessment of a project. The requirement to consider the need for follow-up programs is another innovation.

More information on the Board's environmental responsibilities and activities may be found on page 28 of this report, in the *Other Board Activities* section.

Oil and Gas Reserves

The Board evaluates and reports on oil and gas resources and reserves in Canada, based on internal studies and data collected from other government agencies. The Board and the AERCB approved terms of reference for the design and implementation of a common reserves data base for oil and gas reserves. Both Boards are committed to developing more efficient methods for maintaining estimates of reserves, not only to meet the requirements of each Board but also to further other joint efforts. A formal agreement

between the Boards is expected to be signed in 1994, with full implementation to take place in 1995.

Frontier Oil and Gas

The Board has regulatory responsibility for oil and gas exploration, development and production activities on Canada's frontier lands, excluding those areas offshore of Newfoundland and Labrador, and of Nova Scotia which are subject to federal-provincial accords. The Board regulates these activities to enhance worker safety, to protect the environment and to conserve oil and gas resources.

For northern Canada, the decision-making authority relative to these responsibilities is currently vested in the Minister of Indian Affairs and Northern Development. The Minister of Energy, Mines and Resources currently holds decision-making authority for the remaining offshore areas under federal regulation. Amendments to the *National Energy Board Act*, the *Canada Oil and Gas Operations Act* and the *Canada Petroleum Resources Act*, which will transfer these authorities to the Board, received first reading in the House of Commons in February 1994.

In May 1993, the *Canada Yukon Oil and Gas Accord* was signed by the Yukon Government Leader and the Minister of Indian Affairs and Northern Development. This Accord allows for the transfer to the Yukon of authority to administer and control oil and gas resources, and for the establishment of an Oil and Gas Management Regime. The Board will continue to regulate oil and gas activity in the Yukon during an interim period not to exceed 18 months following signing of the Accord.

Public Consultation

In consultation with interested parties from government, industry and the general public, the Board pursued several initiatives during the year to both simplify and improve its regulatory

processes and to increase its cooperation with other regulatory agencies. As part of its advisory responsibilities, the Board also undertook a number of studies, some of which were published in 1993. For example, the Board held a workshop on incentive regulation, completed a study on inter-utility electricity trade, and published two natural gas market assessment reports. More information on these and other initiatives may be found on page 23, in the *Public Consultation, Studies and Reports* section.

The Board's Operations

Ever since the mid-1980s the Board has been steadily reducing the resources it utilizes to properly carry out its responsibilities. This downward trend was briefly interrupted in 1991-92, due to the relocation of the Board together with parts of the former Canada Oil and Gas Lands Administration (COGLA) to Calgary. During the past year, the Board has continued to seek out and apply new ways of reducing the amount and cost of resources employed in its day-to-day operations.

The Board's 1992-93 budget was set at \$33.5 million. However, in keeping with the government-wide drive for expenditure reduction, and after a rigorous review of existing operations, expenditures were held to \$27.4 million. The number of Board employees in 1993 fell to 315 (including 25 term employees), and the number of Board Members went from nine to seven.

This efficient use of resources is further illustrated by the reduction of the combined expenditures for the Board and former COGLA responsibilities, which were \$48 million (in 1993 dollars) in 1985-86. Compared with 1985-86, the Board's 1993-94 operating expenditures have declined by 40 percent in real terms, although some modification to the COGLA mandate has taken place.

As part of the government's overall plan to further reduce operating budgets

over the next few years, the Board has been asked to reduce its budget by an additional \$3.2 million by 1996-97. The Board confidently expects to meet the savings targets identified, while still maintaining a high standard of core services. Approximately one-third of the desired operating expenditure reduction will come from the scaling back or elimination of peripheral functions combined with organizational realignments. Prompted by the current low level of northern exploration activity, the Board has already decided to close its operations office in Yellowknife, effective 31 March 1994, and to relocate staff to Calgary.

In 1991, the Board implemented the federal government's "Cost Recovery Plan", and since then has been recovering 85 percent of its costs from industry. Cost recovery charges are determined on a calendar-year basis. In order to explain the Board's current budget and ongoing initiatives, semi-annual meetings are held with a committee representing the major industry groups from whom costs are recovered.

Electronic Regulatory Filing

At the request of some of its interested parties, the Board undertook a feasibility study of Electronic Regulatory Filing (ERF) during 1993. The study estimated that ERF would cost \$7 million and concluded that it was technically and economically feasible. ERF would expedite the Board's regulatory process while considerably enhancing its day-to-day responsiveness.

The Board has decided to proceed towards the implementation of ERF over a three-to-four year period. The intention of the first phase, underway at year-end, is to demonstrate how the equipment would be employed on site ("Conference Room Pilot"), while attempting to obtain a second and more focused opinion on the potential costs, benefits and risks for evaluation prior to proceeding. The balance of the project would proceed in phases with re-evaluation decision points between each phase.

The ERF system would permit the flow of information in an electronic format between the Board and its stakeholders and would facilitate even further streamlining of the Board's internal operations. The ERF is expected to be fully cost effective.

Table I
Financial Summary

	Person-Years		Budget	
	Authorized	Utilized	Appropriation (\$ thousands)	Expenditure
1984 - 85	458	447	25 624	24 043
1985 - 86	446	424	27 325	25 055
1986 - 87	449	415	26 774	25 565
1987 - 88	433	392	26 966	25 618
1988 - 89	358	331	24 501	22 572
1989 - 90	347	317	24 484	23 581
1990 - 91	347	321	25 760	23 629
1991 - 92*	397	343	39 674	37 082
1992 - 93	396	323	33 570	27 447

* Effective April 1991, 54 employees and \$6 million from the former COGLA were transferred to the Board. The Board relocated to Calgary in September of the same year.

Energy Production, Consumption and Trade

The Canadian energy industry experienced strong growth in 1993 with energy production increasing by 5.1 percent. The production of all major fuels increased. Energy consumption rose at a more moderate pace of 2.9

percent with the largest share of the increase coming from growth in natural gas demand. Total energy exports and imports are estimated to have risen by 9.0 percent and 5.8 percent respectively.

Over the last five years, the market shares of the various energy sources, expressed as a percentage of domestic

consumption, have changed gradually. In 1989, petroleum accounted for 36.2 percent of all energy consumed; however, by 1993 petroleum's share had fallen to 33.9 percent. The corresponding increase in the shares of other fuels has been evenly divided between natural gas and those sources used primarily to generate electricity, i.e., hydro, nuclear and coal. The share of renewables has remained fairly stable at 5.6 to 5.8 percent of energy consumption.

Table 2
Canadian Energy Supply and Disposition (a)
(petajoules)

	1992	1993(b)	Percent Change
Production (c)	13 269	13 952	5.1
Imports	1 916	2 028	5.8
Total Supply	15 185	15 980	5.2
Domestic Use	9 456	9 734	2.9
Exports	5 729	6 246	9.0
Total Disposition	15 185	15 980	5.2

(a) Includes petroleum, natural gas, coal, hydro, nuclear, renewables and other.

(b) Estimate

(c) Includes inventory change and other adjustments.

Table 3
Canadian Energy Consumption by Energy Source
(percent)

	1989	1990	1991	1992 (a)	1993(b)
Petroleum	36.2	36.5	34.4	34.5	33.9
Natural Gas	25.7	25.8	25.9	26.0	26.7
Hydroelectricity	10.7	11.3	11.6	11.9	11.7
Nuclear	9.6	9.1	10.5	9.9	10.0
Coal	12.3	11.5	11.7	12.0	12.0
Renewables and Other	5.6	5.7	5.8	5.7	5.7
Total - Market Shares	100.0	100.0	100.0	100.0	100.0
Total - Petajoules	9 745	9 337	9 420	9 456	9 734

(a) Preliminary

(b) Estimate

Source: Appendix B1

The value of petroleum, natural gas and electricity exports is estimated to have increased from \$15.9 billion in 1992 to \$17.9 billion in 1993. Because the value of the imports of these commodities remained largely unchanged, there was an increase of \$2.1 billion in the value of net exports, from \$10.4 billion in 1992 to \$12.5 billion in 1993 (Table 4).

Exploration and Development Activity

During 1993, activity levels in land, drilling and the geophysical sector increased dramatically from 1992 levels, reflecting optimism, particularly in the natural gas sector.

Canadian oil and gas industry spending at provincial and federal land sales totalled \$732 million in 1993, compared with \$206 million in 1992. Both levels of government leased the mineral rights to four million hectares (10.1 million acres), compared with two million hectares (4.9 million acres) in 1992. The average price per hectare increased to \$178 (\$72 per acre) from \$109 per hectare (\$44 per acre).

On the East Coast, industry committed to expenditures of \$5.3 million for exploration rights in western Newfoundland, covering an area of 191 000 hectares (472 000 acres) and \$2.9 million in the Newfoundland offshore (Jeanne d'Arc Basin), covering 77 000 hectares (190 000 acres).

The average number of active drilling rigs per week increased from 133 in 1992 to 250 in 1993, and the average rig utilization rate increased from 28 percent to 56 percent. The number of wells drilled almost doubled to approximately 9 400, compared with 4 776 in 1992.

Geophysical activity during the second half of 1993 was higher than the 1992 level in every month, in terms of the average number of active crews. The annual average increased from 28 in 1992 to 37 in 1993. The total number of kilometres of seismic shot increased by about 25 percent.

Exploration and development expenditures in Canada during 1993 are estimated at \$8.0 billion compared with \$5.3 billion spent in 1992. Expenditures during the 1989-1993 period are illustrated in Figure 4.



International Oil Markets

After increasing by more than one dollar in the first three months of 1993 to reach US\$20.36 per barrel in March, the price of West Texas Intermediate (WTI) crude at Cushing, Oklahoma began an almost uninterrupted slide over the following nine months. The rate of decline accelerated in late fall and by December WTI averaged only \$14.61. For the entire year, WTI averaged \$18.46 compared to \$20.70 in 1992.

The softness in oil prices reflected the apparent unwillingness of the Organization of Petroleum Exporting Countries (OPEC) to reduce output in the face of generally stable demand combined with production increases from non-OPEC sources, particularly the North Sea. OPEC production in 1993 averaged 24.3 per day, up slightly from 24.1 million in 1992. Oil prices were also influenced by expectations that Iraq would soon be allowed to export.

World oil demand in 1993 is estimated to have been 66.9 million barrels per day, 200 000 barrels per day less than in 1992. Demand in developed countries

Table 4

Canadian Trade in Petroleum, Natural Gas and Electricity

(petajoules and billion dollars)

	1992		1993(a)	
	PJ	Billion\$	PJ	Billion\$
Exports				
Petroleum (b)	2 599	10.5	2 839	11.2
Natural Gas	2 198	4.7	2 387	5.9
Electricity (c)	94	0.7	106	0.8
Total Exports	4 891	15.9	5 332	17.9
Imports				
Petroleum (b)	1 495	5.2	1 659	5.2
Natural Gas	91	0.2	39	0.1
Electricity (c)	6	0.1	9	0.1
Total Imports	1 592	5.5	1 707	5.4
Net Exports	3 299	10.4	3 625	12.5

(a) Estimate

(b) Includes petroleum products and natural gas liquids.

(c) Electricity is converted at 3.6 petajoules per terawatt hour.

Figure 1
Land Sales

(million hectares leased)

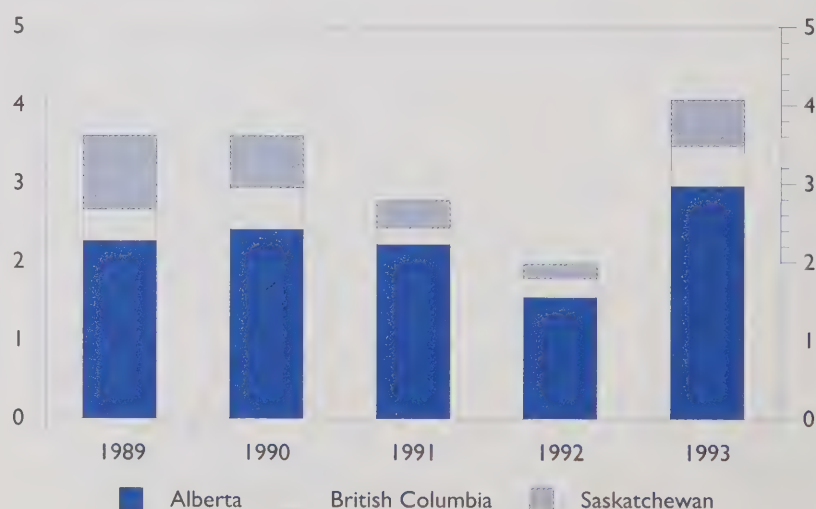


Figure 2
Wells Drilled

(thousand)

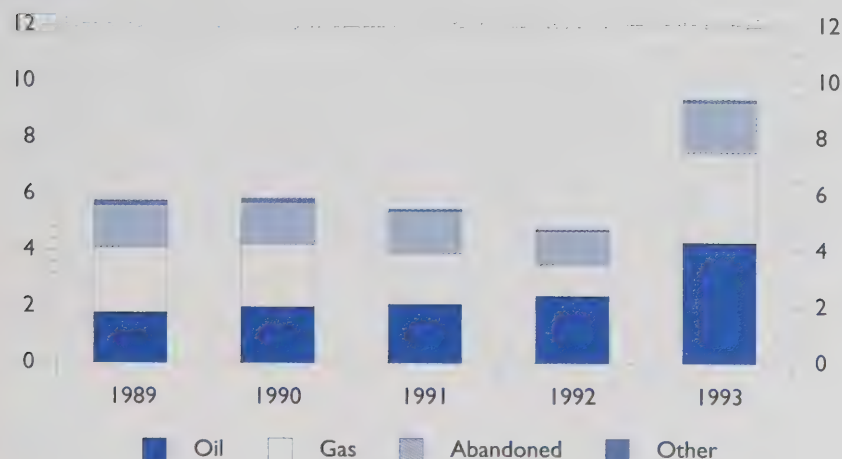


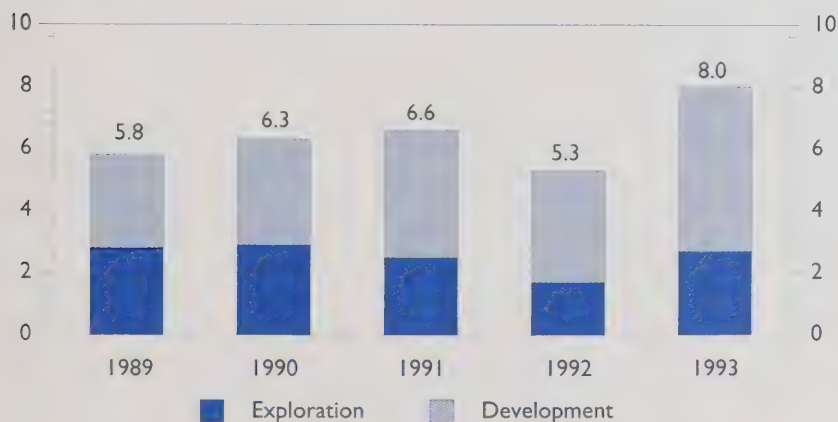
Figure 3
Geophysical Activity

(active crews per month)



Figure 4
Exploration and Development Expenditures

(billion dollars)



changed little in 1993: North America experienced small increases while Western European demand decreased slightly. The most dramatic changes continued to occur in the former Soviet Union where oil demand is estimated to have declined from 6.9 million barrels per day in 1992 to 5.6 million.

Total crude oil production by countries outside OPEC and excluding the former Soviet Union rose 500 000 barrels per day in 1993 to 32.6 million barrels per day. In the former Soviet Union, crude oil production continued a steep four-year decline to stand at 7.8 million barrels per day, down from 9.0 million in 1992.

Oil Reserves

Estimates of established reserves of conventional crude oil and bitumen appear in Table 5.

The Board's estimate of remaining established reserves of conventional crude oil, as of 31 December 1992, is 680.1 million cubic metres (4.3 billion barrels). Compared with year-end 1991, this is an increase of about one-half percent or 4.0 million cubic metres (25 million barrels). Reserves additions, comprised of new discoveries, extensions to existing pools and revisions to estimates of reserves in existing pools, replaced 105 percent of conventional crude oil production in 1992. A significant portion of these additions resulted from the application of horizontal drilling, as well as from an upward adjustment to reserves recognized for the Hibernia field.

Table 6 illustrates the trend of reserves additions relative to production for conventional crude oil over the five-year period 1988 to 1992. On a cumulative basis, additions replaced 93 percent of production.

Total remaining established reserves of conventional oil and bitumen, as of 31 December 1992, were 1162.3 million cubic metres (7.3 billion barrels) compared with the year-end 1991 estimate of 1178.1 million cubic metres (7.4 billion barrels).

Definitions pertaining to reserves are included in the glossary at the end of this section.

Crude Oil and Petroleum Products

Crude Oil and Equivalent Production

Production of crude oil and equivalent in Canada averaged 289 300 cubic metres (1.82 million barrels) per day in 1993, an increase of 5.5 percent over the 1992 level. Production could have been higher had space been available on trunk pipelines to transport additional oil from Western Canada. Horizontal drilling and reactivation of suspended wells were the main contributors to the increase in productive capacity in Western Canada. Supply from Eastern Canada increased due to the start-up of production from Cohasset and the introduction of year-round production from offshore Nova Scotia.

The production of conventional light crude oil amounted to about 143 800 cubic metres (904 900 barrels) per day in 1993, approximately 3 000 cubic metres (19 800 barrels) per day higher than the 1992 level. Synthetic crude oil production from the **Syncrude Canada Ltd.** and **Suncor Inc.** integrated mining plants in northeast Alberta averaged 38 800 cubic metres (243 900 barrels) per day in 1993, about 4.2 percent higher than in 1992, despite operational problems at Syncrude at the start of the year and two fires in the hydro-treating unit at Suncor in the fall. The production of heavy crude oil and bitumen averaged 83 200 cubic metres (523 100 barrels) per day in 1993, an increase of 11.2 percent over the 1992 level. Pentanes plus production averaged 23 500 cubic metres (147 700 barrels) per day, an increase of 9.6 percent above the 1992 rate, mainly due to higher natural gas production in 1993.

Crude Oil Imports

In 1993, crude oil imports increased by nearly 14 percent and represented 39 percent of total refinery feedstock requirements in Canada, compared with 36 percent in 1992. On a regional basis, the Atlantic region imported almost 96 percent of its requirements, with the remainder being Canadian production. Quebec imported approximately 97 percent of its

Figure 5
WTI at Cushing

(US\$ per barrel)

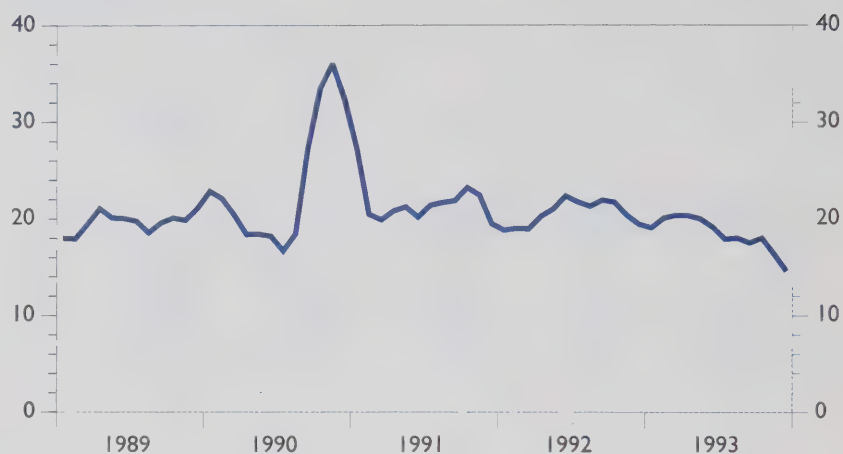


Table 5

Estimated Established Reserves of Conventional Crude Oil and Crude Bitumen at 31 December 1992

(million cubic metres)

	Initial	Remaining
Conventional Crude Oil		
British Columbia	96.0	19.2
Alberta	2 262.1	411.4
Saskatchewan	525.7	117.3
Manitoba	36.4	7.2
Ontario	12.3	1.7
Northwest Territories and Yukon Territory (a)		
Mackenzie Delta & Beaufort Sea	0.0	0.0
Arctic Islands & Eastern Arctic Offshore	0.1	0.7
Mainland Territories	37.5	19.8
Nova Scotia (b)	5.4	4.8
Newfoundland (c)	98.0	98.0
Total Conventional Crude Oil	3 074.4	680.1
Crude Bitumen (d)		
Surface-Mineable	644.0	434.0
In Situ	107.1	48.2
Total Crude Bitumen	751.1	482.2
Total (Conventional Oil and Bitumen)	3 825.5	1 162.3

- (a) For the purpose of this table, the Northwest Territories and Yukon Territory are divided into three geographic regions. The reserves for the Arctic Islands and Eastern Arctic Offshore represent only the Bent Horn field. The reserves for the Mainland Territories are composed totally of the Norman Wells field.
- (b) The reserves for Nova Scotia represent only the Cohasset and Panuke fields.
- (c) The reserves for Newfoundland are composed totally of the Hibernia field.
- (d) Source: Alberta Energy Resources Conservation Board, Report ST93-18 (based on developed projects only).

Table 6
Conventional Crude Oil Reserves
Additions and Production

(million cubic metres)

	Additions	Production
1988	35	74
1989	109	70
1990	52	70
1991	59	71
1992	76	72
Total	331	357

Table 7
Production of Crude Oil and Equivalent

(thousand cubic metres per day)

	1992	1993 (a)
Light Crude Oil and Equivalent		
Western Canada		
Light Crude Oil	138.5	140.0
Synthetic Crude Oil	37.2	38.8
Pentanes Plus	21.4	23.5
Eastern Canada	2.3	3.8
Total Light	199.4	206.1
Heavy Crude Oil	55.0	62.1
Bitumen	19.8	21.1
Total Heavy	74.8	83.2
Total Crude Oil	274.2	289.3

(a) Estimate

Table 8
Canadian Crude Oil Supply and Disposition

(thousand cubic metres per day)

	1992	1993(a)	Percent Change
Production	274.2	289.3	5.5
Imports	81.3	92.5	13.8
Total Supply (b)	355.5	381.8	7.4
Domestic Use	223.4	235.4	5.4
Exports	134.0	146.9	9.6
Total Disposition (b)	357.4	382.3	7.0

(a) Estimate

(b) The difference between total supply and total disposition is due to inventory changes and other adjustments.

Source: Appendix B2

crude oil, compared to 99 percent in 1992. This decrease reflects the reactivation of the Sarnia-Montreal pipeline in mid-1992, which had been deactivated in mid-1991. Ontario continued to import a small quantity of crude oil, primarily from the U.S. and the North Sea.

North Sea crudes amounted to 48 percent of total crude oil imports, down from 58 percent in 1992. Crude oil originating from OPEC countries represented 40 percent of total imports in 1993, up from 34 percent in 1992. Crude oil imports from other sources accounted for 12 percent, up four percent from the 1992 level.

Crude Oil Exports

Total crude oil exports, including pentanes plus and synthetic crude, were 146 900 cubic metres (925 000 barrels) per day, up 10 percent from 1992. The 1993 total was comprised of about 84 000 cubic metres (529 000 barrels) per day of light crude oil and equivalent and approximately 63 000 cubic metres (397 000 barrels) per day of blended heavy crude oil.

The estimated value of crude oil exports in 1993 was \$6.2 billion, compared with \$6.0 billion in 1992. Higher export volumes were largely offset by lower prices; for example, prices for exports of light and heavy crude oil declined by six and four percent, respectively.

The U.S. Midwest continued to be Canada's most important market. Smaller volumes were shipped to the U.S. West Coast, to the Far East and the U.S. Gulf Coast from Vancouver. The largest export buyers of light Canadian crude oil in 1993 were, in rank order, **Koch Refining Company, Sun Company Inc., Clark Oil and Refining Corporation, Amoco Oil Corporation, Shell Oil Company, United Refining Company and Ashland Oil Inc.** For heavy Canadian crude oil, the largest foreign buyers were **Mobil, Koch, Amoco and Conoco Inc.**

Oil Refining

In 1993, the demand for main petroleum products in Canada fell by less than one percent, with a decline in heavy

fuel oil offset by increases in demand for motor gasoline and middle distillates. Refinery production rose by six percent and imports of main petroleum products fell by 14 percent. Exports of main petroleum products increased by 11 percent.

Refinery receipts of domestic crude oil averaged 142 400 cubic metres (897 000 barrels) per day, a one percent increase from 1992. Receipts of foreign crude oil rose by 11 percent to 92 500 cubic metres (583 000 barrels) per day.

Main Petroleum Product Imports

In 1993, imports of main petroleum products averaged 11 000 cubic metres (69 000 barrels) per day, a decrease of 14 percent from 1992. Imports of motor gasoline rose, while receipts of heavy fuel oil fell significantly.

Main Petroleum Product Exports

In 1993, exports of main petroleum products and partially processed oil increased 11 percent to 34 500 cubic metres (217 000 barrels) per day, accounted for primarily by a 31 percent increase in shipments of middle distillates. Exports of aviation jet fuel and partially processed oil also rose. Exports from the Atlantic provinces increased while shipments from the other regions declined. The Atlantic provinces accounted for about 75 percent of the total volume exported compared to 46 percent in 1992.

The estimated value of main petroleum product exports, including partially processed oil, was \$1.6 billion in 1993, up from \$1.5 billion in 1992. This value excludes product exports from crude oil processing agreements for which prices are not assigned.

The U.S. continued to be Canada's largest buyer of petroleum products, receiving almost 92 percent of total exports, compared with 90 percent in 1992. Exports were also made to the Far East and Europe. In the U.S., the East Coast continues to be the largest recipient of Canadian refined petroleum products, followed by the Gulf Coast. The largest exporters of main petroleum products were, in rank order, **Irving**

Oil Limited, Newfoundland Processing Limited, Imperial Oil Limited, Shell Canada Limited and Statoil North America Inc.

Oil Pipeline Capacity

During 1993, **Interprovincial Pipe Line Inc.** (IPL) generally operated at capacity on the Edmonton-Sarnia portion of its system.

The volumes nominated on the system exceeded capacity throughout 1993, resulting in monthly apportionment ranging from a low of 13 percent in March to a high of 42 percent in December. In response to this capacity shortfall, IPL applied to the Board in June 1993 to increase its capacity by 17 500 cubic metres (110 000 barrels) per day. The application was subsequently revised

Figure 6
Light and Heavy Crude Oil Export Prices

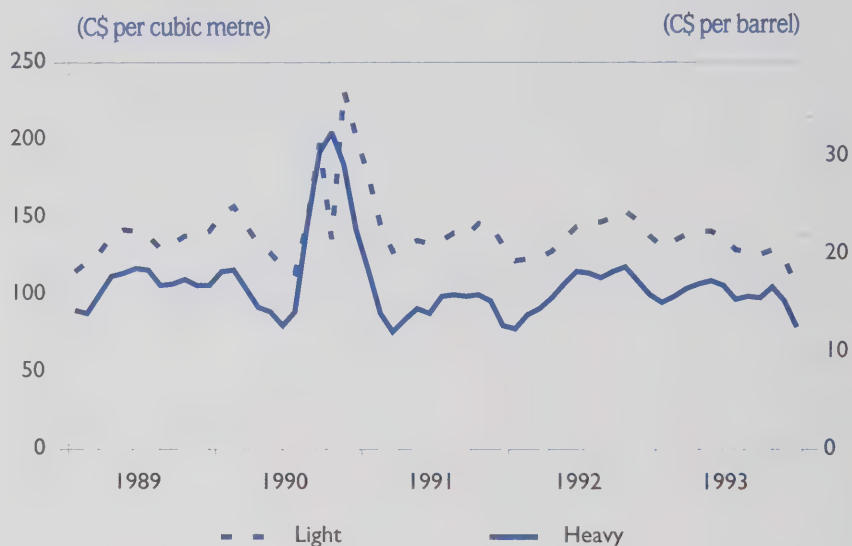


Table 9
Petroleum Product Exports, 1993 (a)
(thousand cubic metres)

	Motor Gasoline	Middle Distillates	Aviation Turbine Fuel	Heavy Fuel Oil	Partially Processed Oil	Total (b)
Atlantic	3 089	4 452	2	704	1 184	9 431
Quebec	13	342	0	220	84	659
Ontario	262	663	9	353	0	1 286
Prairies	142	329	141	24	0	636
British Columbia	182	257	42	82	0	562
Total	3 688	6 043	194	1 382	1 268	12 575

(a) Preliminary

(b) Excludes propane, butanes, lubricants, greases and asphalt.

Figure 7

Crude Oil and Equivalent Supply and Disposition 1993

(thousand cubic metres per day)



Domestic crude oil refined in Canada	142.4
Domestic crude oil exported from Canada	146.9
Imported crude oil refined in Canada	92.5
of which	
North Sea	44.4
Western Hemisphere	10.4
Middle East	15.5
Other	22.2

to 27 100 cubic metres (170 000 barrels) per day in November 1993.

Throughput increased in 1993 on the pipeline operated by **Trans Mountain Pipe Line Company Ltd.**, resulting in the pipeline operating at capacity during all months except March to June, inclusive.

Natural Gas

Natural Gas Reserves

The Board's estimate of remaining established reserves of marketable natural gas for Canada, as of 31 December 1992, is 1911 billion cubic metres (67.5 trillion cubic feet), a decrease of 369 billion cubic metres (13.0 trillion cubic feet) from the year-end 1991 estimate. The majority of the decrease in 1992 was due to the reclassification of established reserves of 309 billion cubic metres (10.9 trillion cubic feet) to the discovered resources category in the Mackenzie Delta and Beaufort Sea region. This occurred because of the absence of activity to develop these resources. The other 60 billion cubic metres (2.1 trillion cubic feet) decrease in remaining established reserves is mainly due to production in 1992 exceeding reserves additions from the Western Canada Sedimentary Basin.

For the period 1988 to 1992, cumulative reserves additions replaced 115 per cent of natural gas production. This trend is illustrated in Table 11.

Definitions pertaining to reserves are included in the glossary at the end of this section.

Supply and Demand

Marketable natural gas production in Canada is estimated at 126.7 billion cubic metres (4.5 trillion cubic feet) in 1993, an increase of 11 percent over 1992. Imports were approximately 1.0 billion cubic metres (35 billion cubic feet), down 58 percent from 1992.

Domestic demand is estimated to have increased by 5.8 percent. Growth has particularly strong in the western provinces,

largely due to colder weather in comparison to 1992.

Exports

Gas exports to the U.S. increased by about 8.6 percent in 1993, to 63.0 billion cubic metres (2.2 trillion cubic feet) from 58.0 billion cubic metres (2.0 trillion cubic feet) in 1992. Total gas export revenues increased by about

25 percent, to \$5.9 billion from \$4.7 billion in 1992.

The Central Region of the United States accounted for 40 percent of Canada's 1993 gas export sales, the Northeast 25 percent, California 21 percent, the Pacific Northwest 13 percent and the Mountain Region one percent. The Central Region was responsible for the bulk of the year-over-year increase

Figure 8

Main Petroleum Products Average F.O.B. Export Price

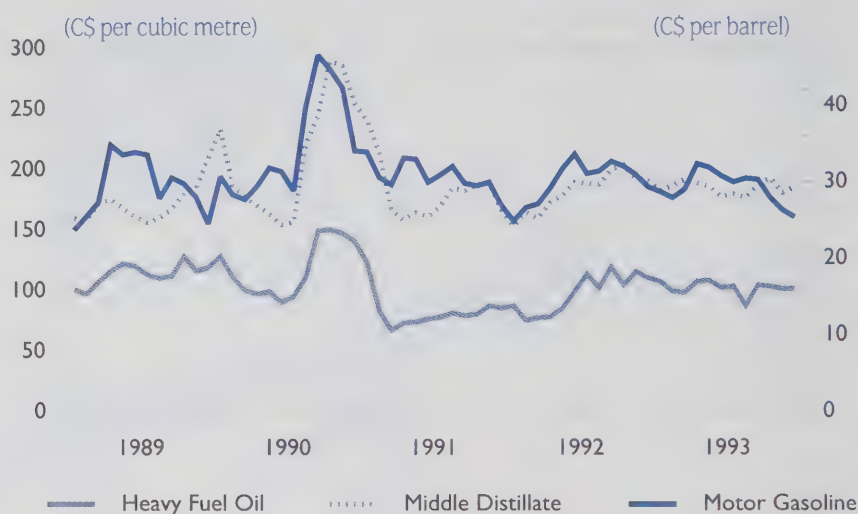


Table 10

Estimated Established Reserves of Marketable Natural Gas at 31 December 1992

(billion cubic metres)

	Initial	Remaining
British Columbia	488	237
Alberta	3 401	1 578
Saskatchewan	151	81
Ontario	41	9
Northwest Territories and Yukon Territory		
Mackenzie Delta & Beaufort Sea (a)	0	0
Arctic Islands & Eastern Arctic Offshore	0	0
Mainland Territories	15	6
Total	4 096	1 911

(a) The 309 billion cubic metres previously attributed to this region are no longer carried as established marketable reserves.

in export volumes and most of the remainder of the increase came from the Northeast Region. In 1993, the Canadian share of the U.S. gas market was 11 percent of consumption.

Sales of Canadian gas exported under short-term Board orders, which apply for a period of up to two years, decreased to 20.2 billion cubic metres (712 billion cubic feet) in 1993 from 26.3 billion cubic metres (928 billion cubic feet) in 1992. Short-term sales accounted for 32 percent of total natural gas exports in 1993,

compared with 45 percent in 1992. The balance of gas exports occurred under NEB licences, which may have a term of up to 25 years, although licences issued in recent years have generally had terms of not more than 15 years.

Export Prices

During 1993, the availability of natural gas on North American markets moved toward a closer balance with demand, raising prices in Canada and the U.S. The average cash price for spot gas over the year at the Henry

Hub, Louisiana was US\$2.21 per thousand cubic feet, which was US\$0.41, or 23 percent, higher than in 1992. The Henry Hub is located near the junction of several U.S. interstate pipelines and is the delivery point for natural gas futures contracts traded on the New York Mercantile Exchange.

A direct link between Henry Hub prices and Canadian export prices did not exist in 1993. However, the trend in Henry Hub prices is indicative of overall trends in the U.S. market and is therefore an indicator of potential impacts on Canadian export prices. In 1993, Canadian export prices reflected the increases in the U.S. and rose by 15 percent to \$2.49 per gigajoule from \$2.16 in 1992.

Natural Gas Pipeline Capacity

Pipeline construction during 1993 resulted in the four largest interprovincial and international gas pipelines in Canada, owned by **Alberta Natural Gas Company Ltd.**, **Foothills Pipe Lines Ltd.**, **TransCanada PipeLines Limited** and **Westcoast Energy Inc.**, having a combined delivery capacity of 330 million cubic metres (11.7 billion cubic feet) per day by year-end. Of this, 195 million cubic metres (6.9 billion cubic feet) per day was available for export service. Over the year, export and domestic volumes averaged 93 percent of pipeline capacity.

Natural Gas Liquids

In 1993, total production of natural gas liquids from gas plants and refineries was 80 500 cubic metres (507 000 barrels) per day (Table 13). Ethane production was 31 800 cubic metres (200 000 barrels) per day, an increase of 12 percent over 1992. Propane production was 30 100 cubic metres (190 000 barrels) per day, one percent higher than 1992, and the production of butanes was 18 600 cubic metres (117 000 barrels) per day, a decrease of two percent

Total exports of natural gas liquids during 1993 were 21 100 cubic metres (133 000 barrels) per day. Ethane exports were 2 900 cubic metres (18 000 barrels) per day, propane exports were 12 800 cubic metres (81 000 barrels) per day and butanes exports were 5 400 cubic metres (34 000 barrels)

Table 11
Marketable Natural Gas Reserves
Additions and Production (a)
(billion cubic metres)

	Additions	Production (b)
1988	82	94
1989	194	101
1990	136	102
1991	116	104
1992	67	114
Total	595	515

(a) Conventional areas

(b) Production figures are actual values rather than the year-to-year difference in cumulative production as is normally stated in many reserves documents.

Table 12
Canadian Natural Gas Supply and Disposition
(billion cubic metres)

	1992	1993(a)	Percent Change
Production	114.5	126.7	10.7
Imports	2.4	1.0	-58.3
Total Supply (b)	116.9	127.7	9.2
Domestic Use	62.2	65.8	5.8
Exports	58.0	63.0	8.6
Total Disposition (b)	120.2	128.8	7.2

(a) Estimate

(b) The difference between total supply and total disposition is due to inventory changes and other adjustments.

Source: Appendix B3

Figure 9
Natural Gas Supply and Disposition 1993
 (billion cubic metres)



Domestic gas delivered in Canada	63.7
Domestic gas exported from Canada	63.0
Gas Imports	1.0

- Major Export Points
- Ⓜ Huntingdon
 - Ⓚ Kingsgate
 - Ⓜ Monchy
 - ⓔ Emerson
 - Ⓝ Niagara Falls
 - Ⓜ Iroquois
 - Ⓟ Philipsburg

per day. During 1993, ethane exports increased by 53 percent from 1992, propane shipments rose by seven percent and butanes exports fell by 13 percent.

The U.S. Midwest continued to be Canada's largest market for propane and butanes, receiving almost 70 percent of the total export volume. Smaller amounts were delivered to the U.S. East Coast and West Coast. The largest exporters of propane

were, in rank order, **Amoco Canada Petroleum Company Ltd.**, **Petro-Canada Hydrocarbons Inc.**, **Imperial Gas Liquids** and **Kinetic Resources (LPG)**, while the major exporters of butanes were **Amoco**, **Petro-Canada**, **Kinetic** and **NGL Supply Co. Ltd.**

The estimated value of natural gas liquids exports in 1993 was \$760 million, compared with \$680 million in 1992.

Electricity

Generating Capacity

In 1993, Canada's net generating capacity was estimated to be 109 100 megawatts, an increase of about 3 600 megawatts or three percent over 1992.

Generation and Consumption

Total net generation of electricity in 1993 is estimated at 512 000 gigawatt hours (GW.h), an increase of two percent from 1992. The sources of Canada's total generation were approximately 62 percent hydro, 22 percent conventional thermal, and 16 percent nuclear. Total Canadian consumption in 1993 was estimated to have been 485 200 GW.h, a two percent increase over 1992.

Exports

Electricity sales increased by 12.2 percent in 1993. This increase was due to favourable domestic hydraulic conditions and greater export demand. Total export sales were 29 364 GW.h, an increase of 12 percent over 1992, with an associated revenue of \$858 million, a 23 percent increase. Firm and interruptible sales rose 23 percent and three percent respectively. The average price of both firm and interruptible exports rose eight percent over 1992.

New Brunswick Power's firm exports remained virtually the same in 1993 while interruptible export sales rose eight percent. High reservoir levels in Quebec and increased demand in the New York market led to an overall 33 percent increase in sales in 1993 by **Hydro-Québec**. **Ontario Hydro's** interruptible exports rose dramatically as the utility sought and acquired several new U.S. customers, and the corresponding revenue increased by over 130 percent. **Manitoba Hydro** increased its export volume by 30 percent and its revenue by over 100 percent mainly due to seasonal diversity sales to Minnesota. **B.C. Hydro's** export sales fell by 60 percent due to low water conditions which prevailed in the province throughout the year.

Figure 10
Natural Gas Average Export Prices
(C\$ per gigajoule)

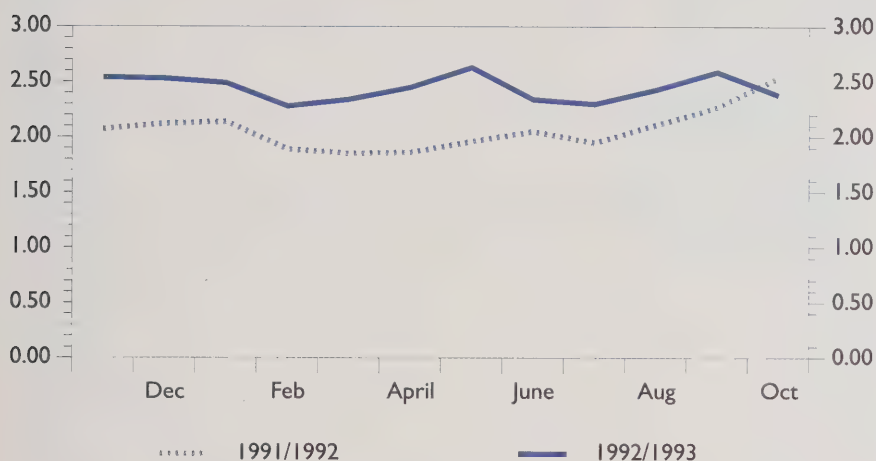
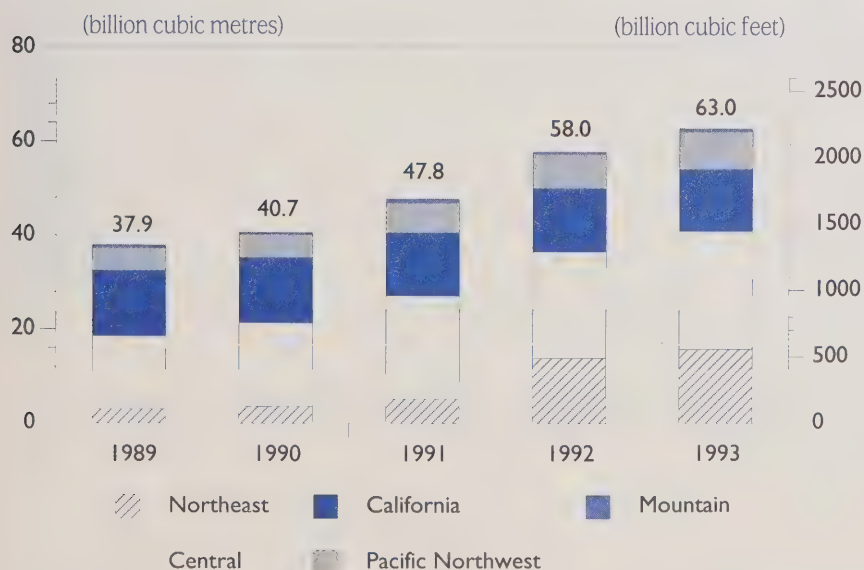


Figure 11
Natural Gas Exports by Region



Hydro remains the leading source of production for all exports of electricity. Its share rose to 77 percent in 1993 from 71 percent in 1992. Other fuels used to produce electricity for export were: coal at 13 percent, nuclear at five percent, and oil at one percent. Exports of electricity generated by natural gas accounted for two percent of total exports, down from eight percent in 1992, due to the decrease in gas fired generation in B.C.

Appendices E6 and E7 show the origin and destination of all exports, by exporting province and importing region or state. As was the case for the past four years, the New England region was the leading import area accounting for about one third of all Canadian electricity exports.

Imports

Imports rose 44 percent during 1993 reflecting low water levels in British Columbia and resulting increased requirements for imports.

Net exports for 1993 were 26 673 GW.h, composed of 29 364 GW.h for exports and 2 691 GW.h for imports.

Table 13
Natural Gas Liquids Supply and Disposition (a)

(thousand cubic metres per day)

	1992	1993(b)	Percent Change
Production	77.0	80.5	4.5
Imports	0.3	0.3	0.0
Total Supply (c)	77.3	80.8	4.5
Domestic Use	57.6	58.9	2.3
Exports	20.1	21.1	5.0
Total Disposition (c)	77.7	80.0	3.0

(a) Includes ethane, propane and butanes.

(b) Estimate

(c) The difference between total supply and total disposition is due to inventory changes and other adjustments.

Source: Appendix B4

Table 14
Canadian Electricity Supply and Disposition

(terawatt hours)

	1992	1993(a)	Percent Change
Production	501.0	512.0	2.2
Imports	1.8	2.6	44.4
Total Supply	502.8	514.6	2.3
Domestic Use	476.6	485.2	1.8
Exports	26.2	29.4	12.2
Total Disposition	502.8	514.6	2.3

(a) Estimate

Source: Appendix B5

Figure 12
International and Interprovincial Transfers of Electricity
(gigawatt hours)



Conventional Natural Gas

Natural gas occurring in a normal porous and permeable reservoir rock which at a particular point in time can be technically and economically produced using normal production practices.

Crude Oil and Equivalent Hydrocarbons

Sometimes referred to as 'Crude Oil and Equivalent'. Includes light and heavy crude oil, pentanes plus, bitumen and synthetic crude oil.

Discovered Recoverable Resources

Resources which are estimated at this time to be recoverable from known accumulations (that is accumulations which have been shown to exist by drilling, testing or production) using known technology. They include cumulative production, remaining reserves and "other discovered recoverable resources".

Established Reserves (Oil and Gas)

Those reserves recoverable under current technology and present and anticipated economic conditions, specifically proved by drilling, testing or production, plus that judgement portion of contiguous recoverable reserves that is interpreted to exist, from geological, geophysical or similar information, with reasonable certainty. This is a term that has been used historically in Canada, particularly by governments, and is typically comprised of proved reserves plus one-half probable reserves.

Frontier Areas

Generally, the northern and offshore areas of Canada.

Horizontal Well

A horizontal well is generally initiated as a vertical well and is deviated to ultimately parallel the reservoir bedding plane to increase the area of contact in the reservoir. This is aimed at improving productivity and recovery.

Initial Reserves

Initial reserves is a term often used to refer to reserves prior to deduction of any production. Alternatively, initial reserves can be described as the sum of remaining established reserves and cumulative production at the time of the estimate.

Light Crude Oil

A collective term used to refer to conventional light crude oil, upgraded heavy crude oil, synthetic crude oil and pentanes plus.

Marketable Natural Gas

Natural gas which meets specifications for end use, whether it occurs naturally or results from the processing of raw natural gas. It excludes field and plant fuel and losses, excepting those related to downstream reprocessing plants. The heating value of marketable natural gas may vary considerably, depending upon its composition, and therefore quantities of reserves are usually expressed not only in volumes, but also in terms of energy content.

Natural Gas Liquids

Those hydrocarbon components recovered from natural gas as liquids. These liquids include, but are not limited to, ethane, propane, butanes, pentanes plus and condensate and may include small quantities of non-hydrocarbons.

Oil Sands

Deposits of sand or sandstone, or other sedimentary rocks containing crude bitumen.

Other Discovered Recoverable Resources

Those discovered resources that are estimated at this time to be recoverable using known technology but that have not yet been recognized as established reserves because of uncertain economic viability.

Pentanes Plus

A mixture mainly of pentanes and heavier hydrocarbons which ordinarily may contain some butanes and which is obtained from the processing of raw gas, condensate or crude oil. For the purpose of this report pentanes plus includes condensate.

Remaining Established Reserves

Initial reserves less cumulative production at the time of the estimate.

Reserves Additions

Incremental changes to established reserves resulting from the discovery of new pools and/or revisions to reserve estimates for established pools.

Synthetic Crude Oil

A mixture of hydrocarbons similar to crude oil derived by upgrading crude bitumen from oil sands, kerogen from oil shales, or other substances such as coal. It may contain sulphur or other non-hydrocarbon compounds.

HEARINGS, INQUIRIES AND REVIEWS

For certain applications and inquiries, the National Energy Board holds public hearings at which applicants and interested parties have full rights of participation. The hearings may be either written or oral. Oral hearings are held at locations across Canada where there is a particular interest in the application in question, or which may be significantly affected by the outcome of the hearing. In 1993, the Board held hearings in locations such as Vancouver, Fort St. John and Richmond, British Columbia; Calgary, Alberta; and London and Toronto, Ontario. A list of the *Reasons for Decision* published in 1993 as a result of hearings held by the Board appears on page 31.

Natural Gas Exports

The Board conducted two oral public hearings on natural gas exports in 1993 and issued 29 new licences.

On 14 January, seven licences for the export of a total 33.2 billion cubic metres (1.2 trillion cubic feet) - over terms ranging from four to seven years - were issued to **Kamine Beaver Falls Cogen, Inc.**, **Kamine Syracuse Cogen, Inc.**, **Saranac Power Partners, L.P.**, **Shell Canada Limited**, **Talisman Energy Inc.** and **Western Gas Marketing Limited**. The gas will be sold to the states of Washington, New York and Michigan, mainly for cogeneration. A hearing had been held on these applications in August 1992 (GH-5-92).

Pursuant to a hearing held in November 1992, 12 licences for the export of some 45 billion cubic metres (1.6 trillion cubic feet) - over terms ranging from seven to 15.5 years - were issued on 11 March to: **Enco Gas, Ltd.**, **Poco Petroleums Ltd.**, **Southern California Edison Company**, **Summit Resources Limited**, and **The Washington Water Power Company** to export jointly with each of **AEC Oil and Gas Company**, **Imperial Oil Resources Limited**, **Shell Canada Limited** and **Western Gas Marketing Limited**; and to **San Diego Gas & Electric Company** to export jointly with each of **Bow Valley Industries Ltd.**, **Canadian Hunter Marketing Ltd.**, **Husky**

Oil Operations Ltd. and **Summit Resources Limited**. The gas will be exported to serve markets in southern California and the Pacific Northwest (GH-6-92).

Following a hearing held in February, five licences for the export of some 6.5 billion cubic metres (232 billion cubic feet) - over periods ranging from three and one-half to 15 years - were issued on 15 June to **Canadian Hydrocarbons Marketing Inc.**, **CanWest Gas Supply Inc.**, **Enron Gas Marketing, Inc.**, **New York State Electric & Gas Corporation** and **Unigas Corporation**. The gas is destined for the states of Washington, Oregon and New York. Pursuant to the same hearing, and in *Reasons for Decision* released on 20 July, the Board issued three licences to **Unigas Corporation** for the export of some 670 million cubic metres (23.7 billion cubic feet) to the cities of Burbank, Glendale and Pasadena, California over a period of six years (GH-7-92, Volumes I and II).

Following a hearing held in June and *Reasons for Decision* published in August, one licence was issued to **CanWest Gas Supply Inc.** for the export of 2.2 billion cubic metres (77.4 billion cubic feet) to the state of Washington over a 20-year term, and another licence was issued to **ProGas Limited** for the export of 7.8 billion cubic metres (274 billion cubic feet) over a 10-year period to the state of Michigan (GH-3-93).

Pipeline Facilities

During 1993, the Board held oral public hearings on applications for facilities filed by **Westcoast Energy Inc.**, **TransCanada PipeLines Limited** and **Interprovincial Pipe Line Inc.**

In a decision made public on 25 February, an application by **Altamont Gas Transmission Canada Limited** for authorization to construct a 300 metre-long natural gas pipeline link in southern Alberta was dismissed on jurisdictional grounds. The application had been considered in 1992 by means of written submissions (GHW-1-92).

In a decision issued on 25 June, **Westcoast Energy Inc.** received Board approval to expand its Pine River Plant at an estimated cost of \$232 million and its Grizzly Pipeline System at an estimated cost of \$68.3 million. A public hearing was held in May (GH-1-93).

Following a hearing held in June, the Board issued a certificate in October approving an application by **TransCanada PipeLines Limited** to construct, at a cost of some \$397 million, new natural gas pipeline facilities in Saskatchewan, Manitoba and Ontario for service starting in 1993-94 and 1994-95 (GH-2-93).

A hearing was held in November on an application by **Interprovincial Pipe Line Inc.** to expand its oil pipeline facilities in Western Canada during 1994 at a cost of some \$256 million. A decision is expected early in 1994 (OH-1-93).

At year-end, a written hearing was being held on an application by **Trans Mountain Pipe Line Company Ltd.** for expansion of its pipeline system.

Pipeline Tolls

The Board conducted three oral public hearings and two written proceedings on pipeline tolls in 1993, and rendered decisions on two hearings that had been held in 1992.

On 17 March, the Board issued a decision setting new tolls to be charged in 1993 by **TransCanada PipeLines Limited** which resulted in an approved cost of service of \$1.53 billion and a 0.2 percent increase in the firm service toll to the Eastern Zone. A hearing had been held in October and November 1992 (RH-2-92).

New tolls to be charged by **Westcoast Energy Inc.**, effective 1 January 1993, were approved in a decision released on 30 March. The decision resulted in an approved cost of service of \$367.3 million and in tolls that were about

1.1 percent higher than the 1992 tolls. A hearing had been held in November 1992 (RH-3-92).

In a decision issued on 19 August, the Board approved new tolls to be charged by **Trans-Northern Pipelines Inc.**, effective 1 January. The decision resulted in an approved cost of service of \$29.3 million and an increase in tolls of eight percent. This application was considered by means of a written proceeding.

In a decision issued on 25 November, the Board approved new tolls to be charged by **Foothills Pipe Lines Ltd.** which resulted in a reduction of 8.6 percent from the applied-for cost of service of \$153.4 million. A hearing was held in August and September (RH-1-93). On 21 December, Foothills filed an application for a review of the Board's decision pertaining to its assessment of the company's business risks and the common equity component.

On 16 December, the Board approved an application by **Interprovincial Pipe Line Inc.**, as amended by a settlement agreement between the company and its industry task force, for new tolls effective 1 January 1994. These new tolls for shipment of light crude oil from Edmonton to Sarnia are, on average, 2.65 percent higher than the tolls in effect since 1992 and are based on a cost of service of \$332.6 million.

The Board held a hearing in October and November on an application by **Westcoast Energy Inc.** for approval of new tolls to be charged in 1994. If approved, these new tolls would result in a decrease of 1.1 percent from the 1993 tolls. A decision is expected in the first quarter of 1994 (RH-2-93).

A hearing was held in November and December on an application by **Trans-Mountain Pipe Line Company Ltd.** for approval of tolls to be charged in 1993 and 1994. The company has been operating on interim tolls since January 1993. The applied-for tolls represent a 5.6 percent decrease from the interim tolls in 1993 but a 2.2 percent increase for 1994 over 1993.

Inquiry

On 16 August, the Board issued a report on an inquiry it had conducted into the Transportation Safety Board (TSB) recommendations (issued on 5 November 1992) concerning the problem of external stress corrosion cracking (SCC) in pipeline transportation systems. The TSB had recommended, among other things, that the operating pressure of pipelines be reduced below the threshold level for the origin or propagation of SCC. The Board concluded that such restrictions on operating conditions would not be an efficient or practical solution for preventing the particular form of SCC currently found in Canadian pipelines. The inquiry also dealt with a reassessment of **TransCanada PipeLines Limited's** Pipeline Maintenance Program which was initiated in 1985 to address the SCC phenomenon (MHW-1-92).

Reviews

On 14 January, the Board denied applications by **Enron Oil Trading & Transportation Canada Ltd.** and **Petro Source Partners, Canada** for a review of decision RH-2-91 regarding **Interprovincial Pipe Line Inc.'s** tolls for 1992.

On 19 January, the Board dismissed two applications by **San Diego Gas & Electric** and **Southern California Edison Company** for a review of decision GHW-2-91 authorizing **Alberta Natural Gas Company Ltd.** to expand its pipeline system in southeastern British Columbia to serve markets in California and the Pacific Northwest.

On 28 June, the Board denied an application by the Canadian Association of Petroleum Producers (CAPP) requesting a review of, and changes to, decision RH-2-92, regarding **TransCanada PipeLines Limited** 1993 tolls and the company's deemed common equity ratio and rate of return on equity.

On 30 June, the Board denied an application by **CNG Transmission Corporation** for a review and stay of the Board's decision

waiving and/or releasing **TransCanada PipeLines Limited** Blackhorse Extension from conditions 8 and 9 of Board Order XG-23-92.

With respect to a request by CAPP for a review of two March decisions regarding the procedure for hearing a **Trans Mountain Pipe Line Company Ltd** Class 2 toll application dated 16 September 1992, the Board decided on 16 July 1993 to convene an oral Class 3 hearing on 1993 and 1994 tolls. It further decided to expand the number of issues to be addressed at the RH-3-93 hearing.

On 23 September, the Board denied an application by **F. & V. Energyby Co-operative Inc.** and **The Beaver Wood Fibre Company Limited** for a review and rescission of the Board's 22 July decision regarding **TransCanada PipeLines Limited's** diversion policy.

During 1993, the Board conducted a written hearing in response to a request by **TransGas Limited** ("TransGas") to review the Board's decision of 25 February, which denied an application by **WBI Canadian Pipeline Ltd.** ("WBI") on jurisdictional grounds. In its Reasons for Decision GH-R-1-93, the Board approved **WBI's** application to construct a 1.15-kilometre (0.715-mile) pipeline and confirmed that **TransGas'** 35.6-kilometre (22.1-mile) Steelman/North Portal Extension, once it had been connected to the **WBI** line, would be subject to federal jurisdiction and regulation by the Board. The order approving construction of the 1.15-kilometre (0.715-mile) North Portal/Portal Pipeline was amended in December, to allow construction and operation of the line by **Many Islands Pipe Lines (Canada) Ltd.** instead of **WBI**. The Board has also approved the purchase and operation by **Many Islands** of the 35.6-kilometre (22.1-mile) Steelman/North Portal Extension.

On 22 October, the Board denied applications from **Serenpet Inc.** and **Wainoco Oil Corporation** requesting that the Board review its 26 August decision to issue Order AO-1-TG-6-92 to **Westcoast Energy Inc.** regarding the liquids recovery service toll for 1992.

On 23 October, the Board denied an application by **Czar Resources Ltd.** on the same subject.

Foothills Pipe Lines Ltd. filed an application with the Board on 21 December requesting a review of the Board's November decision concerning the tolls to be charged by the pipeline company.

Applications Received to be Considered in 1994

The Board will hold public hearings in the first quarter on applications filed in 1993 by:

InterCoastal Pipe Line Inc. and **Interprovincial Pipe Line Inc.** to convert

an existing crude oil pipeline in southern Ontario to natural gas transmission, and to construct additional facilities (GH-4-93);

Brooklyn Navy Yard Cogeneration Partners, L.P., Husky Oil Operations Ltd., ProGas Limited, Shell Canada Limited, and Western Gas Marketing Limited for 16 licences to export natural gas and for amendments to two existing natural gas licences (GH-5-93);

TransCanada PipeLines Limited for approval of tolls to be charged in 1994 (RH-4-93); and

Alberta Natural Gas Company Ltd for an expansion at an estimated

cost of \$51.7 million of its pipeline system in southeastern British Columbia.

The Board received two applications for construction of natural gas pipelines under the Ottawa River, between Ontario and Quebec. One application was filed by **Niagara Gas Transmission Limited** and the other by **PanCanadian Petroleum Limited**. A decision on the procedures to be followed in considering these applications will be taken early in the new year.

Trans-Northern Pipelines Inc. applied for new tolls to take effect on 1 January 1994. The application will be reviewed in the context of a written proceeding.

PUBLIC CONSULTATION, STUDIES AND REPORTS

With respect to its advisory function, and in seeking ways to improve its regulatory process, the Board consulted widely with interested parties in government, industry and among the public, undertook new studies, and published a number of reports.

Incentive Regulation Workshop

In January, the Board held an Incentive Regulation Workshop. This was aimed at considering possible and practical alternatives to the traditional cost of service method for the economic regulation of pipelines, with emphasis placed on increasing operational efficiency through incentive mechanisms. A summary of the workshop was published in May. The broad reaction of workshop participants was that fundamental changes to the regulatory process are not currently required. However, several potential initiatives were identified during the workshop, and the Board has undertaken to make an assessment of these initiatives in consultation with industry and other interested parties. The concept of a generic rate of return hearing applicable to the major pipelines regulated by the Board was raised. Further consultation failed to achieve a consensus on the subject,

and the Board stated that it would not propose a generic rate of return hearing at this time.

Public consultations were also undertaken with respect to financial surveillance reports filed by regulated pipelines. Feedback from industry is being reviewed.

It is expected that further consultations will be undertaken with respect to the toll settlement process used by joint industry task forces in the settling of issues and with respect to the Board's compliance audit program.

Export Impact Assessment Workshop

The Export Impact Assessment (EIA) is one element of the public hearing component of the market-based procedure used by the Board to make decisions on the licensing of natural gas exports. The purpose of the EIA is to determine whether a proposed export is likely to cause Canadians difficulty in meeting their energy requirements at fair market prices. Applicants for export licenses may file their own EIA or utilize the Board's analysis. In April, the Board held a one-day workshop to address the issues surrounding the analysis and

assumptions contained in the Board's September 1992 draft. A summary of the workshop discussion was published in May. As a result of this workshop, and follow-up correspondence with interested parties, the Board decided that it would no longer issue a separate EIA document. Instead, the analysis will be carried out within the framework of the Board's long-term energy supply and demand report, *Canadian Energy Supply and Demand* and its periodic *Natural Gas Market Assessment* reports.

Electricity Export Regulations

As part of ongoing consultations with interested parties, the Board in July issued a Memorandum of Guidance on *Process Reforms Concerning Electricity Export and International Power Line Applications*. The changes outlined in the memorandum simplify the application review procedures, enable exporters to respond more quickly to market opportunities, and allow interested parties to comment on applications earlier in the review process.

The Board also sought input to the 1990 *Electricity Regulations* for export and power line applications.

Inter-utility Electricity Trade

Forty-two written responses were received to two discussion papers, entitled *Inter-utility Cooperation and Transmission Access and Wheeling*, which had been published by the Board in 1992. These responses came from provincial governments and regulatory agencies, electric utilities and non-utility generators, and other interested parties. After analysis and assessment of the responses, and evaluation of recent U.S. legislative and regulatory changes, a report was prepared. It outlines alternative courses of action that the federal government might consider in order to facilitate inter-utility electricity trade, with the related economic benefits such trading can bring. The report was submitted to the Minister in January 1994.

Exports of Oil Sands Production

A written review on licensing procedures for long-term exports of oil sands production was conducted at the request of the Minister. To initiate the review and assist in the preparation of submissions, a discussion paper entitled *Inquiry into Licensing of Long-Term Exports of Oil Sands Petroleum Production* was

distributed to interested parties in September. The Board subsequently received comments from interested parties and is preparing a report for submission to the Minister in February 1994.

Streamlining Section 58 Applications

The Board sought industry and public input on the streamlining of its section 58 process for routine pipeline facilities applications. This section of the *National Energy Board Act* allows the Board to approve pipeline projects of less than 40 kilometres in length and other associated facilities and property, without a public hearing. Over the past year, concerns have been expressed to the Board about the administrative burden in the regulation of capital additions and associated expenses. The Board is of the view that there is room for streamlining of its section 58 process, by eliminating the requirement for pre-approval of routine items, and by allowing one-time approvals of multi-year programs.

Energy Supply and Demand

The Board announced that it is updating its long-term energy outlook, *Canadian*

Energy Supply and Demand, covering the period 1993-2010. Compared to the last report issued in 1991, a number of changes are proposed in the approach taken to analysis and in the report's structure. Interested parties were invited to make written submissions on these proposals and other pertinent matters relating to Canada's energy supply and demand outlook. The report is scheduled for release in mid-1994.

Natural Gas Market Assessments

In December, the Board issued two *Natural Gas Market Assessment* reports as part of its ongoing monitoring of energy markets. *Natural Gas Supply - Western Canada, Recent Developments (1982-1992) and Short-Term Deliverability Outlook (1993-1996)* summarizes the evolution of Canadian gas supply over the past decade and projects a short-term outlook. *Canadian Natural Gas Market Mechanisms: Recent Experiences and Developments* describes the responses of natural gas buyers and sellers to deliverability difficulties, with emphasis on experiences in the 1992-93 winter period.

OTHER BOARD ACTIVITIES

Natural Gas

In October, the Board decided to revoke, effective 1 November, two orders issued in 1992 which had restricted natural gas exports to northern California. The decision was based on a review of submissions. These stated that negotiations had resulted in a Decontracting Plan which had been agreed to by the gas purchaser and a large majority of the producers involved in what has become known as the Canada-California gas dispute.

Electricity

Ontario Hydro filed an application in October asking the Board to revoke Certificate EC-III-II, which authorizes its existing international power line located on the mill property of **Boise Cascade Canada Ltd.** in Fort Frances, Ontario. Ontario Hydro also applied for authorization to construct and operate a new international power line in place of the existing line. The application further requests authorization to install a second, identical circuit on the same towers for future use by **Boise Cascade**. The second

circuit would not be connected to the **Boise Cascade** power system at this time. The application was still under review in December.

In a letter dated 30 November 1993, **Hydro-Québec** requested that the Board consider exempting from review those applications for electricity exports which are subject to terms of one year or less. **Hydro-Québec** further requested that the Board authorize such exports within 24 hours of the submission of any summary application, in order that the highly competitive short-term market in the United States might be better

addressed. The Board is examining this request and will respond to **Hydro-Québec** early in the new year.

Pipeline Facilities

During 1993, the Board continued to provide assistance to the Northern Pipeline Agency to enable that Agency to carry out its responsibilities under the *Northern Pipeline Act*. This assistance was provided in respect of facility additions by **Foothills Pipe Lines Ltd.**, which holds certificates of public convenience and necessity for the construction of the Canadian portion of the Alaska Natural Gas Transportation System. Advice was provided relating to the construction of 78 kilometres of line pipe in southern British Columbia, at an estimated cost of \$113 million, and the addition of a compressor unit in Saskatchewan at an estimated cost of \$33 million.

In conjunction with **Foothills Pipe Lines Ltd.**'s southern British Columbia expansion, **Alberta Natural Gas Company**

Ltd undertook a \$95 million expansion, approved by Board order, involving additions and modifications to its three compressor stations. The overall expansion went into service on 1 November 1993.

Pipeline Safety

There were no fatal accidents resulting from the construction and operation of NEB-regulated pipelines in 1993. There were, however, 65 reported pipeline incidents, and 258 reported minor workplace injuries to pipeline company or contractor employees. The Board carried out field investigations of four of these pipeline incidents. No toxic substance spills on rights-of-way as a result of construction activities were reported. The Board notes the increase in pipeline incidents from 1992 to 1993 and is considering the reasons and implications.

The Board has sole responsibility for regulating the safety of pipelines under

its jurisdiction. With regard to accidents, this role includes dealing with any environmental impacts, approving emergency procedures, and investigating accidents for cause and contributing factors. At present, the Board shares responsibility for the investigation of accidents with the Transportation Safety Board. The TSB, as part of its mandate to advance transportation safety, may also investigate pipeline accidents and make recommendations to the Board concerning the elimination or reduction of any safety deficiencies identified. Currently, companies are required to report details of accidents on operating pipelines to both agencies. The Board is negotiating with the TSB a Memorandum of Understanding designed to eliminate this duplication and to clarify the respective roles of the two agencies.

In 1993, the number of violations by third parties of the Board's pipeline crossing regulations decreased for the fourth consecutive year. The number has fallen from 82 in 1990 to 40 in 1993. This is largely due to a greater level of public awareness of the requirements of the regulations, in particular of the requirement to notify pipeline companies prior to undertaking excavation or construction which could affect pipelines. A revised version of *Excavation and Construction near Pipelines*, a guide for excavators affected by Board-regulated pipelines, was published in 1993.

As a result of an uncontrolled propane release from the Winnipeg terminal of the **Petroleum Transmission Company** pipeline, and the subsequent TSB accident report, the Board conducted an audit of all companies under its jurisdiction which transport high vapour pressure products or sour gas. The audit identified 12 sites where the configuration of pipeline facilities could be the cause of similar uncontrolled releases of high vapour pressure products. Remedial action was recommended by the Board and has been taken at all 12 sites.

Table 15
Causes of Pipeline Incidents 1989 - 1993

	1989	1990	1991	1992	1993
Defective Welds	5	0	3	1	8
Material Failure	12	12	16	18	23
Third Party Damage	2	5	9	5	3
Corrosion	3	1	2	4	5
Other (a)	26	29	19	20(b)	26(c)
Total	48	47	49	48(b)	65

(a) Incidents in 1993 in the 'Other' category include: seven workplace and construction incidents; ten operator errors and five other incidents with varying causes.

(b) Indicates corrections to the 1992 Annual Report, reflecting changes in the criteria now being utilized to determine the number of reportable incidents.

(c) Includes three incidents where cause has not been determined.

Figure 13
Gas Pipeline Companies Regulated by
the National Energy Board



- | | | |
|--|---|--|
| 1. Amoco Canada Petroleum Company Ltd. | 9. Imperial Oil Resources | 19. Pouce Coupe Pipe Line Ltd. |
| 2. Aurora Pipe Line Company | 10. Interprovincial Pipe Line (NW) Ltd. | 20. SCL Pipeline Inc. |
| 3. Cochin Pipe Lines Ltd. | 11. Interprovincial Pipe Line Inc. | 21. Sun Pipe Line Company |
| 4. Dome Kerrobert Pipeline Ltd. and Pan Canadian Kerrobert Pipeline Ltd. | 12. Inverness Petroleum Limited | 22. Trans Mountain Pipe Line Company Ltd. |
| 5. Dome NGL Pipeline Ltd. | 13. Joint Venturers of the Bi-Provincial Upgrader | 23. Trans-Northern Pipelines Inc. |
| 6. Dome NGL Pipeline Ltd. and Amoco Canada Petroleum Company Ltd. | 14. Manito Pipelines Ltd. | 24. Wascana Pipe Line Ltd. |
| 7. Ethane Shippers Joint Venture | 15. Montreal Pipe Line Limited | 25. Westspur Pipe Line Company (1985) Inc. |
| 8. Genesis Pipeline Canada Ltd. | 16. Murphy Oil Company Ltd. (inactive) | 26. Yukon Pipelines Limited |
| | 17. Northwest Transmission Company Limited | |
| | 18. Petroleum Transmission Company | |

Figure 14
Oil and Oil Products Pipeline Companies Regulated by
the National Energy Board



- | | | |
|---|--|--|
| 1. Alberta Natural Gas Company Ltd | 13. Gazoduc TQM. Inc. | 23. Peace River Transmission Company Limited |
| 2. Amerada Hess Canada Ltd. | 14. Huntingdon International Pipeline Corporation | 24. Petrorep (Canada) Ltd. |
| 3. Amoco Canada Resources Limited | 15. Koch Exploration Canada, Ltd. | 25. Poco Petroleum Ltd. |
| 4. Blue Range Resource Corporation | 16. Many Islands Pipe Lines (Canada) Limited | 26. Portal Municipal Gas Company Canada Inc. |
| 5. Bow Valley Industries Ltd. | 17. Mid-Continent Pipelines Limited | 27. Revenue Canada - Customs and Excise |
| 6. Canadian Hunter Exploration Ltd. | 18. Minell Pipeline Ltd. | 28. SCL Quebec Pipeline Inc. |
| 7. Canadian-Montana Pipe Line Company | 19a. Murphy Oil Company Ltd. (inactive) | 29. St. Clair Pipelines Ltd. |
| 8. Centra Transmission Holdings Inc. | 19b. Murphy Oil Company Ltd. | 30. Talisman Energy Inc.
(formerly B.P. Canada Resources Limited) |
| 9. Champion Pipe Line Corporation Limited | 20. Niagara Gas Transmission Limited | 31. TransCanada PipeLines Limited |
| 10. Consumers' Gas (Canada) Ltd. | 21. Novacor Chemicals (Canada) Ltd. | 32. Union Gas Limited |
| 11. ELAN Energy Inc. | 22. Novacorp International Pipelines Ltd.
(not built) | 33. Westcoast Energy Inc. |
| 12. Foothills Pipe Lines Ltd. | | 34. 167496 Canada Ltd. |

Environmental Matters

The Board conducts an environmental surveillance program to ensure that regulated companies protect the environment during the construction of their facilities, and restore any lands which are disturbed. The program allows the Board to verify compliance with each company's own corporate environmental protection procedures and with the Board's own requirements. In addition, the Board responds to landowner complaints relating to land rights matters and to environmental concerns arising as a result of construction. In 1993, the Board conducted 22 environmental inspections related to various pipeline projects, and four inspections related to environmental concerns raised by landowners.

The Board requires that companies submit post-construction environmental reports. These reports are intended to address project-related environmental issues, and to establish from each company's monitoring results that each right of way has been properly restored. During the year, 65 such reports were reviewed by the Board.

Noise emission data are collected from compressor and pump stations. These data will be of assistance in resolving any noise-related landowner complaints and helping to define acceptable noise levels associated with new projects.

In response to new federal regulations governing the storage of polychlorinated biphenals (PCB) material, all companies under the Board's jurisdiction were asked to provide copies of their current PCB materials documentation, and to confirm that their PCB waste storage facilities met the new requirements. The majority of companies have responded and the Board is updating its inventory data base.

Emergency Procedures

Under the authority of the *Canada Oil and Gas Operations Act*, the Board is

responsible for taking such action as it may deem necessary on frontier lands:

- ♦ to repair or remedy any condition resulting from a spill;
- ♦ to reduce or mitigate any danger to life, health, property or the environment resulting from a spill; and
- ♦ where necessary to assume management and control of operations giving rise to waste, or where a spill or the generation of debris has occurred.

In fulfilling this role during 1993, the Board, amongst other activities:

- ♦ worked with other federal departments and with the Government of the Northwest Territories to develop an *Emergency Response Framework for Government of Northwest Territories Services and Support to Lead Agencies in the Event of an Environmental Emergency in the Northwest Territories*;
- ♦ worked with the Canadian Coast Guard to develop a National Marine Pollution Response Exercise Program; and
- ♦ participated in a Canadian Standards Association working group to update Standard Z731 - *Emergency Planning for Industry*.

Environmental Studies Research Funds

The Environmental Studies Research Funds (ESRF) underwrite a research program which sponsors pertinent environmental and social studies that will, in due course, assist government decision-making related to oil and gas exploration and development on Canada's frontier lands. Funding for the ESRF is provided by levies on frontier lands paid by interest holders, such as oil and gas companies. The ESRF administration is presently completing an overall evaluation of some 28 studies which were initiated over the last three years. No new studies have been supported for 1993 or 1994, and

all ongoing studies are expected to be completed and published by the end of 1994.

Energy Research and Development

The federal Program on Energy Research and Development (PERD) funds numerous scientific and technological programs investigating aspects of exploration, production, transportation, and the use of energy. The Board is active in three committees. It manages, fulfils the role of secretariat, and participates in the 'Engineering, Geoscience, Foundations and Loads' committee's research program. It also participates in and supports the work of the 'Environment' and 'Transportation' committees, by initiating, promoting and managing research that will enhance the safety of personnel, improve environmental protection for offshore oil and gas operations, and improve pipeline design relative to the specific needs of offshore and northern areas.

Frontier Lands – Oil and Gas

Resource Evaluation

During the past year, the Board continued to provide information to the public on northern oil and gas activities and resources. For the first time, it released resource estimates for individual discoveries in the Mackenzie Valley and Yukon.

Operations

Production operations continued at the following four fields: the Norman Wells and Bent Horn oil fields, and the Pointed Mountain gas field - all located in the Northwest Territories - plus the Kotaneelee gas field, located in the Yukon Territory. Production data for these fields are available from the Board. Approval was granted for a propane injection pilot project in the Norman Wells field in February. This

project will assess over a three-year period the technical merits of a propane miscible flood for achieving increased levels of recovery.

Paramount Resources Ltd. completed a three-well extended production testing program and a 3-D seismic development program at Cameron Hills in the Northwest Territories. Analysis of the data from these programs resulted in **Paramount** submitting and receiving approval for a new Drilling Program Application to drill two vertical wells and one horizontal well during the winter of 1994.

Exploratory seismic operations were limited to a single program in the Mackenzie Delta by **Shell Canada Ltd.**, while two geological programs were approved and were operated by **Unocal Canada Ltd.**

Approval was given for the abandonment of nine previously suspended wells in the Northwest Territories, of which two were in

the mainland area and seven in the Arctic Islands. The suspension states of four wells were extended and one was granted a suspension upgrade.

Technical support was provided to the Northern Oil and Gas Directorate of the Department of Indian Affairs and Northern Development in support of northern rights management. This included advice on terms and conditions for northern calls for nominations, recommendations on significant discovery areas, and on technical aspects of the Proven Area Agreement at Norman Wells. Advice provided to the Frontier Lands Management Branch of the Department of Energy, Mines and Resources included a review of the revised development plan for the Cohasset-Panuke oilfield offshore of Nova Scotia.

Diving

In 1993, Board staff completed the approval process for recognition of the Working Divers Institute as an acceptable training

centre, and is presently reviewing two requests from overseas institutes for similar recognition. In addition, Board staff assisted the Nova Scotia and Newfoundland Offshore Boards in the review of diving programs, in the certification process, and in the inspection of diving operations. Board staff also assisted the Canadian Coast Guard with the design of their in-house search and rescue program.

Safety

In 1993, Board staff inspected a total of 40 well sites, one geophysical operation, and five oil and gas field facilities to verify local compliance with appropriate Occupational Health and Safety legislation and operational standards.

There were eight lost-time accidents reported during 1993 associated with activities on northern frontier lands. Five accidents occurred at production sites and three were associated with service rigs.

LEGAL ACTIONS AND REGULATIONS

Supreme Court of Canada

The Grand Council of the Crees (of Québec) and the Cree Regional Authority v. Attorney General of Canada and the National Energy Board

The Supreme Court of Canada heard this appeal on 13 October 1993. It was asked to decide whether a **Hydro-Québec** export licence application could be granted without certain costs disclosure, and whether environmental conditions concerning generation facilities could be included in an export licence. Judgement was reserved.

Hydro-Québec applied to the Board in 1989 for licences to export electricity to the **New York Power Authority** and the **Vermont Joint Owners**. The Board's decision of August 1990 (EH-3-89) approving **Hydro-Québec's** application imposed a condition that the licences will remain valid provided that "any production facility required... to

supply the exports authorized... will have been subjected, prior to its construction, to the appropriate environmental assessment and review procedures...".

Federal Court of Appeal

Altamont Gas Transmission Canada Limited v. National Energy Board

On 26 April 1993, **Altamont Gas Transmission Canada Limited** discontinued its application in the Federal Court of Appeal for leave to appeal the 25 February 1993 decision of the Board. This had dismissed, for jurisdictional reasons, the 26 July 1991 application by **Altamont** to the Board for authority to construct and operate a natural gas pipeline.

Manitoba Hydro v.
National Energy Board

The Federal Court of Appeal has been asked to decide whether the operating

conditions for certain **Manitoba Hydro** facilities, set by the Board in an Amending Order dated 19 November 1992, should be upheld. Pursuant to an application brought by **Manitoba Hydro**, leave to appeal was granted 22 February 1993. The case has yet to be heard.

TransGas Limited v.
National Energy Board

On 26 March, **TransGas Limited** filed an application in the Federal Court of Appeal to appeal a decision of the Board dated 25 February 1993, wherein an application by **WBI Canadian Pipeline Ltd.** for the construction of natural gas pipeline facilities was dismissed. The application was withdrawn on 5 January 1994.

R.E. Wolf v. National Energy Board

On 30 November 1993, the Federal Court of Appeal dismissed the application brought by R.E. Wolf for an oral hearing

and leave to appeal an order granted by the Board on 25 June 1993. This order had approved the proposed Pine River Gas Plant and Grizzly Pipeline System expansion facilities.

*Foothills Pipe Lines Ltd. v.
National Energy Board*

On 22 December 1993, **Foothills Pipe Lines Ltd.** filed an application for leave to appeal the decision and order of the Board dated November 1993 fixing the tolls to be charged by the company effective 25 March 1993. This notice was filed and served upon the Board simultaneously with an application for review of the November 1993 decision of the Board.

Regulations

The National Energy Board keeps under constant review its many rules, regulations and guidelines, to ensure that they are fully responsive to changing market conditions and to help identify ways of simplifying the regulatory process and eliminating any unnecessary regulatory burden.

In May, the Board appeared before a federal advisory panel on regulatory review. The panel concluded, in a report made public by the Minister on 8 October, that the regulatory processes of the Board were both current and responsive to changing conditions. In its submission to the Panel, the Board suggested areas where improvements to the regulatory process could be made. The panel's recommendations endorsed those suggestions, and the Board is following up on the recommendations.

Information on the status of amendments made to regulations during the year, together with plans for 1994, are included in the Board's quarterly *Regulatory Agenda* and in the 1994 *Federal Regulatory Plan*. Amendments to the Board's regulations, either completed or in various stages of preparation in 1993, include the following:

Onshore Pipeline Regulations

Offshore Pipeline Regulations

Part VI Regulations

Electricity Regulations

Export and Import Report Regulations

*Pipeline Companies Records
Preservation Regulations*

*Pipeline Crossing Regulations,
Parts I and II*

*Regulations Pertaining to Crossings
Involving International Power Lines*

Regulations pertaining to frontier oil and gas activities include:

*Canada Oil and Gas
Geophysical Regulations*

Canada Oil and Gas Diving Regulations

Canada Oil and Gas Drilling Regulations

*Canada Oil and Gas
Installations Regulations*

*Canada Oil and Gas Certificate of
Fitness Regulations*

*Canada Oil and Gas Occupational Health
and Safety Regulations*

*Nova Scotia Offshore Area Petroleum
Diving Regulations*

*Nova Scotia Offshore
Petroleum Production and
Conservation Regulations*

*Nova Scotia Offshore Petroleum
Drilling Regulations*

*Nova Scotia Offshore Area Petroleum
Geophysical Regulations*

*Nova Scotia Offshore Certificate of
Fitness Regulations*

*Newfoundland Offshore Certificate of
Fitness Regulations*

*Newfoundland Offshore
Petroleum Production and
Conservation Regulations*

*Newfoundland Offshore
Area Petroleum Geophysical
Regulations*

*Newfoundland Offshore
Petroleum Drilling Regulations*

Guidelines

During the year the Board undertook the review of a number of guidelines, including:

- ♦ guidelines for the preparation of a regional socio-economic impact assessment of gas or oil pipeline projects;
- ♦ physical environment guidelines;
- ♦ offshore waste treatment guidelines;
- ♦ guidelines for the use of oil-based drilling muds;
- ♦ guidelines for the filing of information by companies applying for certificates of public convenience and necessity;
- ♦ a memorandum of guidance for applicants filing for short-term gas export orders and long-term gas export licences; and
- ♦ guidelines for the filing of information by pipeline companies applying for orders fixing tolls and tariffs.

Rules of Practice and Procedure

The Board has revised its Rules of Practice and Procedure and on 30 April submitted them to the Department of Justice and the Treasury Board for approval. Once approved by the Department of Justice, the Rules will be sent for final publication in the *Canada Gazette*.

The Board publishes a number of documents including: monthly energy export statistics, gas market studies, Reasons for Decision on applications, and environmental studies. These documents are described in an information bulletin entitled *The Board's Publications*.

To provide current information on ongoing activities (such as the filing of applications, public hearings, decisions on applications, public consultations, changes to regulations and procedures), the Board regularly issues news releases which are available to the media and the public. There were some 70 releases issued in 1993. In addition, the Board publishes a quarterly *Regulatory Agenda* which provides detailed information on all its regulatory and advisory activities.

The Board is also responsible for managing and disseminating the information it gathers while regulating oil and gas activities in northern Canada. To this end, the Board publishes catalogues of *Released Information* and the *Schedule of Wells* for northern frontier lands. Information and reports on northern operations may be inspected at the Board's offices.

Accessing Information

Any person wishing to receive Board documents should ask to be placed on any one of seven 'area of interest' mailing lists.

Board publications are also available through the Board's library. In addition, applications and submissions, transcripts of hearings, plus a variety of technical, legal, economic and energy studies may be found in the library, which is open to the public from 8:30 to 16:30.

By mid-1994, certain key documents of the National Energy Board will be available to the public via electronic media. An electronic bulletin board - which was being developed and tested in 1993 - will provide instant access (in both official languages) to Board documents, via ordinary computer modem hook-ups. The Board will initially

post news releases, hearings orders, the *Regulatory Agenda* and certain energy statistics. Other documents will progressively be made available. This new system is being launched in order to ultimately provide the public with 24-hour-a-day access to all information as it is published by the Board.

Major Documents Published in 1993

Reasons for Decision

Pipeline Facilities

Altamont Gas Transmission Canada Limited - Preliminary Question of Jurisdiction - February 1993 - GHW-1-92

Westcoast Energy Inc. - June 1993 - GH-1-93

TransCanada PipeLines Limited - September 1993 - GH-2-93

TransGas Limited - WBI Canadian Pipeline, Ltd. - October 1993 - GH-R-1-93

Pipeline Tolls

TransCanada PipeLines Limited - February 1993 - RH-2-92

Westcoast Energy Inc. - March 1993 - RH-3-92

Foothills Pipe Lines Ltd. - November 1993 - RH-1-93

Gas Exports

Various Gas Export Licences - December 1992 - GH-5-92

Various Gas Export Licences - January 1993 - GH-6-92

Various Gas Export Licences - Volume I and Volume II - June 1993 - GH-7-92

Can West Gas Supply Inc., ProGas Limited - July 1993 - GH-3-93

Electricity Exports

Manitoba Hydro-Electric Board - February 1993 - EHW-1-92

The New Brunswick Power Corporation - May 1993 - EHW-1-93

Other Publications

Canadian Electric Utilities: Analysis of Generation and Trends 1991

Incentive Regulation Workshop - A Summary of Discussion - March 1993

Excavation and Construction near Pipelines - April 1993

National Energy Board 1992 Annual Report - April 1993

Export Impact Assessment Workshop - A Summary of Discussion - May 1993

Horizontal Oil Wells: Economics and Potential Impact on Reserves and Supply of Canadian Conventional Oil - June, 1993

Inquiry Report - Transportation Safety Board Recommendations on Stress Corrosion Cracking in Pipelines and Reassessment of TCPL's Maintenance Program - August 1993

Natural Gas Market Assessment: Natural Gas Supply - Western Canada: Recent Developments (1982-1992); Short-Term Deliverability Outlook (1993-1996) - November 1993

Natural Gas Market Assessment: Canadian Natural Gas Market Mechanisms: Recent Experiences and Developments - November 1993

Regulatory Agenda - Issues 44, 45, 46 and 47

For copies of any of these publications, please contact:

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Appendices

Appendix A – Pipeline Companies Under National Energy Board Jurisdiction

Appendix B – Energy Overview

B1	Canadian Energy Consumption	B3	Natural Gas Supply and Disposition	B5	Electricity Generation and Disposition
B2	Crude Oil and Equivalent Supply and Disposition	B4	Natural Gas Liquids Supply and Disposition		

Appendix C – Oil

C1	Certificates Issued During 1993 Approving New Oil Pipeline Facilities Including Pipeline Construction Exceeding 40 Kilometres in Length	C2	Orders Issued During 1993 Approving Oil Pipeline Facilities Including Pipeline Construction Not Exceeding 40 Kilometres in Length	C4	Exports of Canadian Crude Oil and Equivalent
		C3	Exports of Canadian Crude Oil and Equivalent - 1992 and 1993	C5	Exports of Petroleum Products - 1993
				C6	Exports of Petroleum Products - 1992 and 1993

Appendix D – Gas

D1	Certificates Issued During 1993 Approving New Gas Pipeline Facilities Including Construction Exceeding 40 Kilometres in Length	D3	Licences and Long-Term Orders to Export Natural Gas as at 31 December 1993	D5	Natural Gas Exports by Export Point
D2	Orders Issued During 1993 Approving Gas Pipeline Construction Not Exceeding 40 Kilometres in Length	D4	Licences and Long-Term Orders to Import Natural Gas as at 31 December 1993	D6	Total Net Exports of Propane and Butanes

Appendix E – Electricity

E1	Certificates and Permits Issued During 1993 with Respect to International Power Lines	E3	Licences Issued During 1993 Relating to the Export of Electricity	E5	Exports 1993
E2	Amending Orders Issued During 1993 Relating to International Power Lines	E4	Permits and Orders Issued During 1993 Relating to the Export of Electricity	E6	Electricity Trade Between Canada and the United States (by Province)
				E7	Electricity Trade Between Canada and the United States (by American Region/State)

Appendix F – Financial Regulation

F1	Financial Information - Group 1 Oil Pipeline Companies	F2	Financial Information - Group 1 Gas Pipeline Companies
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Appendix A

Pipeline Companies Under National Energy Board Jurisdiction

The following is a list of pipeline companies which own and/or operate interprovincial or international pipelines under the Board's jurisdiction. The pipeline companies have been divided into two groups. Group 1 consists of the ten major pipeline companies which are audited by the Board on a regular basis and whose operating results are continuously monitored by the Board. The 49 companies under the Board's jurisdiction that are not included in Group 1 have been designated as Group 2 companies.

Group 1 Gas

Alberta Natural Gas Company Ltd.	TransCanada PipeLines Limited	Westcoast Energy Inc.
Foothills Pipe Lines Ltd.	Trans Québec & Maritimes Pipeline Inc.	

Group 1 Oil and Products

Cochin Pipe Lines Ltd.	Interprovincial Pipe Line (NW) Ltd.	Trans Mountain Pipe Line Company Ltd.
Interprovincial Pipe Line Inc.	Trans-Northern Pipelines Inc.	

Group 2 Gas

Amerada Hess Canada Ltd.	Koch Exploration Canada, Ltd.	Poco Petroleum Ltd.
Amoco Canada Resources Limited	Many Islands Pipe Lines (Canada) Limited	Portal Municipal Gas Company Canada Inc.
Blue Range Resource Corporation	Mid-Continent Pipelines Limited	Revenue Canada Customs and Excise
Bow Valley Industries Ltd.	Minell Pipeline Ltd.	SCL Quebec Pipeline Inc.
Canadian Hunter Exploration Ltd.	Murphy Oil Company Ltd.	St. Clair Pipelines Ltd.
Canadian-Montana Pipe Line Company	Niagara Gas Transmission Limited	Talisman Energy Inc. (formerly: B.P. Canada Resources Limited)
Centra Transmission Holdings Inc.	Novacor Chemicals	Union Gas Limited
Champion Pipe Line Corporation Limited	Novacorp International Pipelines Ltd. (approved but not built)	167496 Canada Ltd.
Consumers' Gas (Canada) Limited	Peace River Transmission Company Limited	
Elan Energy Inc.	Petrorep (Canada) Ltd.	
Huntingdon International Pipeline Corporation		

Group 2 Oil and Products

Amoco Canada Petroleum Company Ltd.	Imperial Oil Resources	Petroleum Transmission Company
Aurora Pipe Line Company	Inverness Petroleum Limited	Pouce Coupe Pipe Line Ltd.
Dome Kerrobert Pipeline Ltd. and Pan Canadian Kerrobert Pipeline Ltd.	Joint Ventures of the Bi-Provincial Upgrader	SCL Pipeline Inc.
Dome NGL Pipeline Ltd.	Manito Pipelines Ltd.	Sun Pipe Line Company
Dome NGL Pipeline Ltd. and Amoco Canada Petroleum Company Ltd.	Montreal Pipe Line Limited	Wascana Pipe Line Ltd.
Ethane Shippers Joint Venture	Murphy Oil Company Ltd.	Westspur Pipe Line Company (1985) Inc.
Genesis Pipeline Canada Ltd.	Northwest Transmission Company Limited	Yukon Pipelines Limited

Appendix B

Energy Overview

B1. Canadian Energy Consumption (a)

(Petajoules)

	1989	1990	1991	1992 (p)	1993 (e)
Petroleum (b)	3 528	3 410	3 240	3 263	3 300
Natural Gas (c)	2 504	2 413	2 443	2 459	2 602
Hydroelectricity (d)(f)	1 039	1 058	1 096	1 125	1 135
Nuclear	934	848	990	937	978
Coal	1 198	1 077	1 104	1 137	1 165
Renewable and Other	543	531	547	536	554
Total	9 745	9 337	9 420	9 456	9 734

a) Includes non-energy use, own use and conversions and fuel for electricity exports.

b) Includes LPGs.

c) Excludes reprocessing shrinkage and includes ethane, reprocessing fuel and fuel used for bitumen production.

d) Hydro and nuclear are converted at 3.6 PJ/TW.h and 12.1 PJ/TW.h respectively.

e) Estimate

f) Includes energy used to produce steam.

p) Preliminary

B2. Crude Oil and Equivalent Supply and Disposition

(Thousand Cubic Metres per Day)

	1989	1990	1991	1992	1993(e)
Supply					
Canadian Production (a)	264.2	263.4	264.0	274.2	289.3
Imports (b)	77.3	86.2	91.9	81.3	92.5
Total Supply (d)	341.5	349.6	355.9	355.5	381.8
Disposition					
Domestic (b)	249.2	256.6	236.2	223.4	235.4
Exports (c)	102.9	104.2	121.9	134.0	146.9
Total Disposition (d)	352.1	360.8	358.1	357.4	382.3

a) Source: NEB.

b) Source: Statistics Canada.

c) Source: NEB Form 306 - Crude Oil Exports.

d) Total supply does not equal total disposition due to inventory changes and other adjustments.

e) Preliminary

B3. Natural Gas Supply and Disposition

(Billion Cubic Metres)

	1989	1990	1991	1992	1993 (d)
Supply					
Marketable Gas Production	100.6	102.4	104.4	114.5	126.7
Imports	1.2	0.6	0.6	2.4	1.0
Total Supply	101.8	103.0	105.0	116.9	127.7
Disposition					
Net Sales in Canada	56.9	54.5	54.7	56.9	60.3
Other Uses in Canada (a)	3.5	2.9	3.8	5.3	5.5
Exports	37.9	40.7	47.8	58.0	63.0
Total Disposition (b) (c)	98.3	98.1	106.3	120.2	128.8

a) Includes gas used in system line loss and unaccounted for.

b) Includes synthetic natural gas and excludes reprocessing shrinkage and reprocessing fuel.

c) Total supply does not equal total disposition due to inventory changes and other adjustments.

d) Preliminary

B4. Natural Gas Liquids Supply and Disposition

(Thousand Cubic Metres per Day)

	1989	1990	1991	1992	1993(e)
Supply					
Canadian Production (a)	69.6	66.8	73.2	77.0	80.5
Imports (b)	0.7	0.4	0.6	0.3	0.3
Total Supply (d)	70.3	67.2	73.8	77.3	80.8
Disposition					
Domestic (b)	51.4	49.2	55.8	57.6	58.9
Exports (c)	18.8	19.4	18.4	20.1	21.1
Total Disposition (d)	70.2	68.6	74.2	77.7	80

a) Source: NEB.

b) Source: NEB Form 145.

c) Source: NEB Form 157 and 86A.

d) Total supply does not equal total disposition due to inventory changes and other adjustments.

e) Preliminary

B5. Electricity Generation and Disposition

(Terawatt Hours)

	1989	1990	1991	1992	1993(b)
Total Generation	485.7	467.6	489.2	501.0	512.0
Imports(a)	8.7	15.4	1.7	1.8	2.6
Total Supply	494.4	483.0	490.9	502.8	514.6
Demand	475.9	466.7	471.1	476.6	485.2
Exports	18.5	16.3	19.8	26.2	29.4

a) Excludes exchanges between Canada and the United States

b) Preliminary

Appendix C

Oil

C1. Certificates Issued During 1993 Approving New Oil Pipeline Facilities Including Pipeline Construction Exceeding 40 Kilometres in Length

No certificates were issued in 1993.

C2. Orders Issued During 1993 Approving New Oil Pipeline Facilities Including Pipeline Construction Not Exceeding 40 Kilometres in Length

Applicant	Order No.	Issued	Facilities	Estimated Cost (\$)
Amoco Canada Petroleum Company Ltd.	XO-A10-4-93	2-Feb-93	2.2 kilometre gathering pipeline near Boundary Lake, Alberta & British Columbia	87 000
Cochin Pipe Lines Ltd.	XO-C18-9-93	30-Apr-93	18 metre pipeline, Windsor Storage Terminal, Ontario	55 000
	XO-C18-24-93	30-Jun-93	SCADA upgrade	2 145 000
	XO-C18-29-93	11-Aug-93	High pressure brine modifications, Windsor Storage Terminal, Ontario	110 000
	XO-C18-45-93	9-Dec-93	Install flare system upgrades & lube oil storage sheds at 10 existing sites, Alberta & Saskatchewan	146 000
Dome NGL Pipeline Ltd. and Amoco Canada Petroleum Company Ltd.	XO-D56-26-93	5-Aug-93	SCADA upgrade for Samia Downstream System pipeline, Ontario	1 057 000
Dome NGL Pipeline Ltd.	XO-D7-25-93	5-Aug-93	SCADA upgrade for Eastern Delivery System pipeline	1 007 300
Ethane Shippers Joint Venture	XO-E83-30-93	11-Aug-93	High pressure brine modifications at Windsor Storage Terminal, Ontario	571 000
Genesis Pipeline (Canada) Ltd.	XO-G62-35-93	13-Sep-93	6 metre pipeline to Dow Chemical (Canada) Ltd. storage facilities, Samia, Ontario	85 000
Interprovincial Pipe Line Inc.	XO-J1-3-93	21-Jan-93	Miscellaneous projects	7 640 200
	XO-J1-13-93	6-May-93	Montreal Line 9 repairs for corrosion and dents	796 000
	XO-J1-15-93	6-May-93	Power feeder relocation, Glenavon, Saskatchewan and communications system upgrade Edmonton, Alberta	283 000
	XO-J1-19-93	4-Jun-93	Corrosion protection, Montreal Line 9	440 000
	XO-J1-21-93	13-May-93	Human resources payroll system replacement, Edmonton, Alberta	1 330 000
	XO-J1-27-93	16-Jul-93	Storage tank replacement, Regina, Saskatchewan	5 170 000

C2. Orders Issued During 1993 Approving New Oil Pipeline Facilities Including Pipeline Construction Not Exceeding 40 Kilometres in Length (continued)

Applicant	Order No.	Issued	Facilities	Estimated Cost (\$)
Interprovincial Pipe Line Inc.	XO-JI-28-93	27-Jul-93	Central computer replacement, Edmonton Terminal, Alberta	472 000
	XO-JI-33-93	27-Aug-93	Miscellaneous projects	150 050
	XO-JI-34-93	28-Oct-93	Alberta NGL Project, Hardisty Meter Station	5 150 000
	XO-JI-39-93	23-Sep-93	Regional bioremediation facilities, Alberta, Saskatchewan, Manitoba	1 100 000
	XO-JI-41-93	12-Nov-93	Data communications link, Edmonton, Alberta	292 000
	XO-JI-42-93	12-Nov-93	Facilities for bi-directional operation of line 7 between Mississauga and Oakville, Ontario	730 000
Interprovincial Pipe Line (NW) Ltd.	XO-J34-2-93	21-Jan-93	Miscellaneous projects	1 961 800
	XO-J34-38-93	15-Sep-93	Upgrade of Pumping Stations, Norman Wells, McKenzie and Wrigley, Northwest Territories	286 000
	XO-J34-46-93	13-Jan-93	Miscellaneous projects	1 872 000
Manito Pipelines Ltd.	XO-M42-1-93	21-Jan-93	Condensate and blend pumps, Saskatchewan	1 010 000
	XO-M42-5-93	6-Apr-93	Tie-ins near Bodo, Alberta	12 000
	XO-M42-8-93	20-Apr-93	Replacement of a meter at Lone Rock Pump Station, Saskatchewan	14 000
Petroleum Transmission Company	XO-P15-11-93	28-Apr-93	Remote valve operators and telemetry units at Cabri and Whitewood, Saskatchewan	90 000
Petrorep Resources Ltd.	XO-P152-47-93	4-Oct-93	Replacement of a blind flange with a valve at 6-27-86-13-W6M, Alberta	2 000
Sun Canadian Pipe Line Company Limited	XO-S9-43-93	19-Nov-93	Samia Station partial automation, Ontario	150 000
Trans-Northern Pipelines Inc.	XO-T2-18-93	20-May-93	Miscellaneous projects	3 521 000
	XO-T2-22-93	8-Jun-93	Pig trap modifications	50 000
	XO-T2-23-93	30-Jun-93	Miscellaneous projects	1 940 000
	XO-T2-32-93	3-Sep-93	Relocation of 1750 metres of pipeline at CNR Yard, Oakville, Ontario	750 000

C2. Orders Issued During 1993 Approving New Oil Pipeline Facilities Including Pipeline Construction Not Exceeding 40 Kilometres in Length (continued)

Applicant	Order No.	Issued	Facilities	Estimated Cost (\$)
Trans-Northern Pipelines Inc.	XO-T2-40-93	14-Oct-93	Replacement of 20 metres of pipeline on the Sun Canadian Pipeline System, North York, Ontario	50 000
Trans Mountain Pipe Line Company Ltd.	XO-T4-6-93	11-Mar-93	Miscellaneous projects	2 007 500
	XO-T4-7-93	12-Mar-93	Refined products facilities, Edmonton, Alberta to Burnaby, British Columbia	18 003 000
	AO-I-XO-T4-7-93	17-Aug-93	Scope change to Sumas Station modifications, British Columbia	322 000
	XO-T4-10-93	24-Jun-93	Miscellaneous projects	405 500
	XO-T4-12-93	7-May-93	Miscellaneous projects	97 100
	XO-T4-16-93	13-May-93	4.9 kilometre pipeline from Burnaby Terminal to Petro-Canada's Port Moody Refinery, British Columbia	7 426 000
	XO-T4-17-93	15-Apr-93	Station piping at Sumas Station, British Columbia	1 416 000
	XO-T4-31-93	13-Sep-93	Pipeline replacement at kilometre post 116, British Columbia	64 500
	XO-T4-37-93	15-Sep-93	Liner for fire water pond at Burnaby Terminal, British Columbia	71 700
Westspur Pipe Line Company (1985) Inc.	XO-W2-36-93	24-Sep-93	147 metre pipe replacement on Cromer Pipeline, Manitoba.	58 100
Wascana Pipe Line Ltd.	XO-W23-14-93	30-Apr-93	Installation of windskirts on three crude oil tanks, Regina, Saskatchewan	165 000
	XO-W23-20-93	17-Jun-93	Relocation of a booster pump, Ceylon Station and replacement pump, Regina Terminal, Saskatchewan	570 000
	XO-W23-44-93	9-Nov-93	15 metre pipe, tie-in to tank, Milk River Station, Alberta	146 000

C3. Exports of Canadian Crude Oil and Equivalent - 1992 and 1993

(Cubic Metres)

Consignee	1992		1993(a)	
	Total	Daily Average	Total	Daily Average
Amoco Production Company	8 050 319	21 995	8 230 723	22 550
Ashland Oil Inc.	1 779 274	4 861	2 435 852	6 674
BP Oil	937 970	2 563	607 419	1 664
CENEX	1 227 522	3 354	1 288 849	3 531
Chevron Inc.	27 800	76	20 179	55
Clark Oil & Refining Corporation	3 562 644	9 734	3 105 648	8 509
Conoco Inc.	2 266 202	6 192	2 612 732	7 158
Crystal Refining	23 988	66	—	—
Exxon Company, U.S.A.	953 233	2 604	945 666	2 591
Frontier Oil and Refining Company	—	—	28 344	78
Indian Refining	—	—	461 119	1 263
Koch Refining Company	8 806 080	24 060	9 714 985	26 616
Laketon Refining Corp.	212 827	581	—	—
Louisiana Land and Exploration	294 839	806	395 010	1 082
Marathon Petroleum Company	1 027 605	2 808	865 314	2 371
Marubeni Corporation	343 221	938	63 989	175
MG Refining & Marketing Inc.	44 338	121	—	—
Mobil Oil Corporation	6 872 801	18 778	8 347 059	22 869
Montana Refining Company	287 239	785	290 451	796
Murphy Oil U.S.A Inc.	1 161 164	3 173	1 457 533	3 993
Pacific Refining Co.	70 335	192	101 658	279
Shell Oil Company	782 441	2 138	2 628 985	7 203
Sinclair Oil Corporation	400 284	1 094	379 424	1 040
South Western Refining	—	—	56 011	153
Sun Refining and Marketing Co.	3 599 150	9 834	3 244 118	8 888
Texaco U.S.A.	468 794	1 281	921 046	2 523
Total Petroleum Inc.	493 416	1 348	566 151	1 551
United Refining Company	3 407 037	9 309	3 414 158	9 354
The UNO-VEN Company	986 798	2 696	778 923	2 134
Unocal Corp. of California	501 290	1 370	106 831	293
U.S. Oil & Refining Co.	164 797	450	167 302	458
Other	274 794	751	370 673	1 016
Total	49 028 200	133 957	53 606 151	146 866

a) Preliminary

C4. Exports of Canadian Crude Oil and Equivalent

(Cubic Metres per Day)

	1989	1990	1991	1992	1993(a)
Light Crude Oil and Equivalent	47 136	44 814	62 335	73 943	83 513
Heavy Crude Oil	55 734	59 379	59 544	60 014	63 353
Total	102 870	104 193	121 879	133 957	146 866

a) Preliminary

C5. Exports of Petroleum Products - 1993

(Cubic Metres)

Month	Motor Gasoline	Middle Distillates	Heavy Fuel Oil	Aviation Turbine Fuel	Partially Processed Oil	Total(a)
January	298 744	545 229	100 698	29 519	78 400	1 052 590
February	333 262	561 128	119 830	17 031	39 400	1 070 651
March	328 437	460 227	128 101	23 669	74 100	1 014 534
April	290 016	544 039	121 639	18 913	161 245	1 135 852
May	457 159	403 786	122 703	19 711	58 200	1 061 559
June	236 135	359 047	67 039	12 969	115 600	790 789
July	482 837	378 409	131 577	12 840	77 897	1 083 560
August	249 957	452 439	190 222	13 512	155 972	1 062 102
September	175 703	602 345	104 970	12 169	109 840	1 005 027
October	307 420	574 267	138 531	9 068	238 426	1 267 713
November	265 446	567 101	45 766	9 408	39 400	927 121
December(b)	263 000	595 000	110 500	15 000	120 000	1 103 500
Total	3 688 117	6 043 016	1 381 576	193 809	1 268 480	12 574 998

a) Excludes propane, butane, lubricants, greases, asphalt, petrochemicals, etc.

b) Preliminary

C6. Exports of Petroleum Products - 1992 and 1993

(Cubic Metres)

Exporter	1992	1993(a)
Bell's Petroleum Ltd.	1 004	—
Canadian Turbo Inc.	80 887	—
Chevron Canada Limited	485 707	118 992
Consumers' Co-operative Refineries Limited	105 456	116 054
Daigle Oil Co.	13 746	7 443
Griffith Oil Co., Inc.	28 940	43 058
Husky Oil Marketing Company	26 855	34 954
ICS Petroleum Ltd	32 134	37 230
Imperial Oil Limited	1 726 627	732 971
Irving Oil Limited	2 621 401	5 358 800
Kildair Service Ltée	127 305	21 982
Les Pétroles Calex Ltée	9 398	—
MX Petroleum Corp	60 749	47 338
MacEwen Petroleum Inc.	40 192	47 351
Northern Transportation Co. Ltd.	—	31 691
Northwest Terminals	—	25 116
Neste Petroleum (Canada) Inc.	10 386	—
Newfoundland Processing Limited	2 378 900	3 470 276
Noco Energy Corp.	381 500	269 361
Northridge Petroleum Marketing Inc.	12 319	24 301
Novacor Chemicals (Canada) Ltd.	167 556	194 979
Olco Oil	398 686	356 763
Petro-Canada Products	584 295	188 198
Pétrole Moderne Enr.	9 336	8 778
Pétroles Norcan Inc.	2 405	8 831
Robo Petroleum Inc.	234	28
Roy-L Canadian Fuels Co.Ltd.	737	13 235
Shell Canada Limited	848 990	481 277
Sipco Oil Limited	3 385	—
Statoil North America Inc.	—	445 938
Sunoco Inc.	444 402	137 518
TexPar Canada	27 274	1 938
Ultramar Canada Inc.	419 842	181 444
Universal Terminals Ltd.	209 437	164 762
White Pass Petroleum Services	21 437	4 392
Total	11 281 518	12 574 998

a) Preliminary

Appendix D

Gas

D1. Certificates Issued During 1993 Approving New Gas Pipeline Facilities Including Pipeline Construction Exceeding 40 Kilometres in Length

Applicant	Certificate No.	Issued	Facilities	Estimated Cost (\$)
TransCanada PipeLines Limited	GC-85	9-Dec-93	164 kilometres of looping and the addition of 129 megawatts of new compression	395 334 000

D2. Orders Issued During 1993 Approving New Gas Pipeline Facilities Including Pipeline Construction Not Exceeding 40 Kilometres in Length

Applicant	Order No.	Issued	Facilities	Estimated Cost (\$)
Alberta Natural Gas Company Ltd	XG-A2-11-93	12-Mar-93	Miscellaneous projects	10 798 000
	XG-A2-16-93	8-Apr-93	Miscellaneous projects	1 554 000
Blue Range Resource Corporation	XG-B88-2-93	28-Jan-93	21 kilometre sour gas pipeline from Clear Hills, Alberta to a gathering system near Fort St. John, British Columbia	1 309 200
Canadian Hunter Exploration Ltd.	XG-C87-49-93	25-Oct-93	3.75 kilometres of pipeline near Grand Prairie, Alberta	512 000
Canadian-Montana Pipe Line Company Limited	XG-C9-54-93	2-Nov-93	Arden Meter Station, Alberta	104 100
Consumers' Gas (Canada) Ltd.	XG-54-93	24-Nov-93	Gas sales tap, Vaughan, Ontario	500
	XG-C283-59-93	16-Dec-93	Gas sales tap, Vaughan, Ontario	2 000
Centra Transmission Holdings Inc.	XG-C293-26-93	1-Jun-93	2 town taps, Pinewood & Devlin, Ontario	12 100
ELAN Energy Inc.	XG-E89-13-93	26-Mar-93	12.5 kilometres of pipeline crossing the Saskatchewan Alberta border near Bodo, Alberta	450 000
Foothills Pipe Lines Ltd.	XG-F6-14-93	23-Mar-93	Compressor station cooling air modifications, Alberta & Saskatchewan	415 000
	XG-F6-20-93	22-Apr-93	Miscellaneous projects	1 913 500
	XG-F6-21-93	6-May-93	Tie-ins at Elbow River, Burton Creek and Cochrane, Alberta	1 688 000
	XG-F6-57-93	2-Dec-93	Spare gas generator upgrade, Alberta & Saskatchewan	1 540 000

D2. Orders Issued During 1993 Approving New Gas Pipeline Facilities Including Pipeline Construction Not Exceeding 40 Kilometres in Length (continued)

Applicant	Order No.	Issued	Facilities	Estimated Cost (\$)
Foothills Pipe Lines Ltd.	XG-F11-37-93	9-Aug-93	Exemption from leave to open procedures, Segment 1A connections, British Columbia	
	XG-F11-41-93	25-Aug-93	Exemption from leave to open procedures for Segments 2A and 3A, British Columbia	
Gazoduc T.Q.M. Inc.	XG-T28-51-93	27-Oct-93	Miscellaneous projects	28 000
Many Islands Pipe Lines (Canada) Limited	XG-M29-58-93	9-Dec-93	Approval to operate the 35.6 kilometre Steelman/ North Portal pipeline, Saskatchewan	
	AO-I-XG-W57-3-93	9-Dec-93	Approval to construct and operate the 1.15 kilometre WBI pipeline, crossing the international border near North Portal, Saskatchewan	
Niagara Gas Transmission Limited	XG-N6-15-93	7-May-93	Pilot regulator assembly, St. Lawrence Gate Station, Ontario	3 400
Portal Municipal Gas Company Canada Inc.	XG-P160-53-93	18-Nov-93	10 metre pipeline crossing the international border near North Portal, Saskatchewan	1 000
Revenue Canada, Customs and Excise	XG-R48-8-93	25-Feb-93	2 pipelines, 10 and 15 metres, crossing the international border at Climax, Saskatchewan	7 500
St. Clair Pipelines Ltd.	XG-S119-44-93	10-Sep-93	Odourizing facility, Douglastown, Ontario	336 000
TransCanada Pipelines Limited	XG-T1-1-93	14-Jan-93	Miscellaneous Projects	21 269 000
	XG-T1-4-93	21-Jan-93	4.5 kilometres of pipe replacement, Oshawa to Cornwall, Ontario	4 570 000
	XG-T1-5-93	4-Feb-93	Pipe replacements for changes in class location, drain crossings and highway relocations	34 444 000
	XG-T1-10-93	19-Mar-93	Sales Metering Station, St. Rémi, Quebec	280 000
	XG-T1-12-93	2-Apr-93	Replacement of 1.2 kilometres of pipe on the Montreal Line and Central Section pipeline	2 618 000
	XG-T1-18-93	27-May-93	Sales Metering Station, St. Clet, Quebec	322 000
	XG-T1-23-93	20-May-93	Replacement of 21.2 kilometres of pipe on the Montreal Line and Central Section due to stress corrosion cracking	32 197 000
	AO-I-XG-T1-23-93	15-Jul-93	Change in project scope	843 000
	XG-T1-29-93	6-Jul-93	2 meter runs at the Chippawa Meter Station, Ontario	718 000
	XG-T1-34-93	23-Jul-93	Meter Station at St. Clet, Quebec	292 000
	XG-T1-36-93	26-Jul-93	Manifolding for the Douglastown Compressor Station, Ontario	948 000

D2. Orders Issued During 1993 Approving New Gas Pipeline Facilities Including Pipeline Construction Not Exceeding 40 Kilometres in Length (continued)

Applicant	Order No.	Issued	Facilities	Estimated Cost (\$)
TransCanada PipeLines Limited	XG-TI-38-93	26-Aug-93	Miscellaneous projects	645 000
	XG-TI-39-93	23-Aug-93	Sales tap at St. Sebastien, Quebec	36 000
	XG-TI-40-93	20-Aug-93	Pig launcher and reciever at the Napierville Extension, Quebec	340 000
	XG-TI-45-93	15-Sep-93	Meter Station, St. Sebastien, Quebec	261 000
	XG-TI-46-93	21-Sep-93	Interconnection facilities between meter station and odourization facility, Douglastown, Ontario	56 000
	XG-TI-48-93	18-Oct-93	Heated building at Welwyn Sales Meter Station, Saskatchewan	97 000
	XG-TI-56-93	9-Dec-93	Pipe replacements for stress corrosion cracking and dent repairs	6 750 000
	XG-TI-60-93	16-Dec-93	Exemption of facilities covered by GC-85 from leave to open procedures and land clauses	
Westcoast Energy Inc.	XG-W5-6-93	29-Jan-93	18 kilometre East Osborn Pipeline, Peace River District, British Columbia	4 006 000
	XG-W5-7-93	4-Feb-93	Drito dehydrator at the McMahon Plant, British Columbia	3 000 000
	XG-W5-9-93	25-Feb-93	Miscellaneous projects	13 884 000
	XG-W5-17-93	27-May-93	Miscellaneous projects	5 014 000
	XG-W5-19-93	27-May-93	22.5 kilometres of Southern Mainline looping and a gas turbine at Station 4B, British Columbia	70 600 000
	XG-W5-22-93	11-May-93	McMahon Plant upgrade and McMahon Meter Station, British Columbia	270 000
	XG-W5-24-93	24-Jun-93	Upgrade of pipeline at Likely, Dale Lake Road and Shelly, British Columbia	10 400 000
	XG-W5-25-93	20-May-93	Gas management and engineering materials selection systems	391 000
	XG-W5-27-93	28-May-93	Pine River Expansion tie-ins, British Columbia	458 000
	XG-W5-28-93	10-Jun-93	Pine River Gas Plant and Grizzly Pipeline expansions, British Columbia	299 892 000
	XG-W5-30-93	24-Jun-93	Water analyzing station, Grizzly Pipeline, British Columbia	480 000
	XG-W5-31-93	24-Jun-93	Metering facility and connection pipeline, Huntingdon, British Columbia	2 026 000

D2. Orders Issued During 1993 Approving New Gas Pipeline Facilities Including
Pipeline Construction Not Exceeding 40 Kilometres in Length (continued)

Applicant	Order No.	Issued	Facilities	Estimated Cost (\$)
Westcoast Energy Inc.	XG-W5-32-93	16-Jul-93	Miscellaneous projects	1 229 000
	XG-W5-33-93	16-Jul-93	Miscellaneous projects	1 782 000
	XG-W5-35-93	29-Jul-93	Mainline upgrade Seabird Island, British Columbia	3 938 000
	XG-W5-42-93	09-Sep-93	2.5 kilometres of pipe replacement at Barker Creek and 1.5 kilometres of pipe replacement at Sikanni River Tributary, British Columbia	8 316 000
	XG-W5-43-93	16-Sep-93	Replacement and extension of facilities at Kobes Booster Station, Alaska Highway, British Columbia	2 008 900
	XG-W5-50-93	20-Oct-93	Oil/water separator and containment system at Station 7, Savona, British Columbia	132 000
	XG-W5-52-93	20-Dec-93	Miscellaneous projects	1 286 000
	XG-W5-55-93	8-Dec-93	Miscellaneous projects	520 000
WBI Canadian Pipeline, Ltd.	XG-W57-3-93	29-Sep-93	1.15 kilometre pipeline crossing the international border near North Portal, Saskatchewan	146 950

D3. Licences and Long-Term Orders to Export Natural Gas as at 31 December 1993

Exporter	Licence or Order Number	Point of Export	Term of Licence or Order		Maximum Volume		
			From	To	Daily (10 ³ m ³)	Annual (10 ⁶ m ³)	Term (10 ⁶ m ³)
AG-Energy, L.P.	GL-182	Iroquois, Ont.	1993-11-01 2008-11-01	2008-10-31 2008-12-31	467.0 467.0	170.6 28.5	2 587.0
Alberta Northeast Gas, Limited and AEC Oil and Gas Company	GL-105	Iroquois, Ont.	1988-11-01 1992-11-01	1992-10-31 2008-02-28	399.0 533.0	146.4 194.7	2 714.0
Alberta Northeast Gas, Limited and ATCOR Ltd.	GL-104	Iroquois, Ont.	1988-11-01 1992-11-01	1992-10-31 2008-02-28	790.0 1 057.0	289.9 386.1	5 428.0
Alberta Northeast Gas, Limited and ProGas Limited	GL-103	Iroquois, Ont.	1988-11-01 1992-11-01	1992-10-31 2008-02-28	1 399.0 1 870.0	513.4 683.0	10 236.0
Alberta Northeast Gas, Limited and TransCanada Pipelines Limited	GL-102	Iroquois, Ont.	1988-11-01 1992-11-01	1992-10-31 2008-02-28	5 547.0 7 507.0	3 035.7 2 741.9	42 646.0
		Niagara Falls, Ont.	1988-11-01	2004-02-28	283.3	103.4	42 646.0
Amoco Canada Petroleum Company Ltd.	GL-112	Huntingdon, BC	1989-07-24 1989-11-01	1989-10-31 2004-10-31	704.0 704.0	70.4 257.0	3 856.0
			1992-11-01	2002-10-31	424.9	155.1	1 551.0
Amoco Canada Resources Limited and Consolidated Edison Company	GL-127	Niagara Falls, Ont.	1990-07-27 1990-11-01	1990-10-31 2004-10-31	873.0 873.0	84.7 319.0	4 728.0
B.C. Gas Utility Ltd.	GOL-6-93 (a)	Huntingdon, B.C.	1993-09-01	1996-04-30	N/S	N/S	N/S
Canadian Hunter Marketing Ltd.	GL-107	Niagara Falls & Iroquois, Ont.	1990-11-01	2010-10-31	845.0	254.0	3 381.0
Canadian Hydrocarbons Marketing Inc.	GL-183	Huntingdon, B.C.	1992-11-01	2002-10-31	273.9	100.0	1 000.3
	GL-217	Huntingdon, B.C.	1993-08-26 1993-11-01	1993-10-31 1996-10-31	136.4 136.4	9.1 49.8	174.6
	GL-225	Huntingdon & Kingsgate, B.C.	1993-12-15 1994-11-01	1994-10-31 2004-10-31	2 851.5 2 851.5	915.9 1 040.8	1 369.1
	GL-226	Huntingdon & Kingsgate, B.C.	1993-12-15 1994-11-01	1994-10-31 2004-10-31	988.6 988.6	317.5 360.8	4 746.8
	GL-227	Huntingdon & Kingsgate, B.C.	1993-12-15 1994-11-01	1994-12-15 2004-10-31	570.3 570.3	183.2 208.2	2 738.6
Canadian Occidental Petroleum Ltd.	GL-228	Huntingdon & Kingsgate, B.C.	1993-12-15 1994-11-01	1994-10-31 2004-10-31	114.4 114.4	36.8 41.8	549.0
Canadian Occidental Petroleum Ltd.	GL-177	Emerson, Man.	1992-11-01	2002-10-31	212.5	77.5	775.0

D3. Licences and Long-Term Orders to Export Natural Gas as at 31 December 1993 (continued)

Exporter	Licence or Order Number	Point of Export	Term of Licence or Order		Maximum Volume		
			From	To	Daily (10 ³ m ³)	Annual (10 ⁶ m ³)	Term (10 ⁶ m ³)
Canadian-Montana Pipe Line Company	GL-184	Aden, Alta.	1992-11-01	2004-10-31	1 416.4	283.3	3 966.2
	GO-3-79	Regan Field, Alta.	1979-05-01	1993-12-31	30.0	10.3	105.0
CanStates Gas Marketing and Transco Energy Marketing Company	GL-136	Niagara Falls, Ont.	1992-08-27	1992-10-31	2 125.0	140.3	9 307.5
			1992-11-01	2002-10-31	2 125.0	775.6	
	GL-137	Niagara Falls, Ont.	1990-11-08	1991-10-31	1 371.1	449.7	5 593.8
			1991-11-01	2000-10-31	1 371.1	459.3	
			2000-11-01	2002-10-31	1 371.1	500.4	
Canterra Energy Ltd.	GL-113	Emerson, Man.	1989-08-24	1989-10-31	424.9	29.3	2 099.1
			1989-11-01	2003-10-31	424.9	155.1	
	GL-114	Emerson, Man.	1989-08-24	1989-10-31	424.9	29.3	2 246.4
			1989-11-01	2004-10-31	424.9	155.1	
CanWest Gas Supply Inc.	GL-189	Huntingdon, B.C.	1993-01-28	1993-10-31	2 606.0	722.5	11 415.0
			1993-11-01	2003-11-01	2 606.0	952.0	
	GL-218	Huntingdon, B.C.	1993-11-01	2008-10-31	273.2	100.0	1495.0
	GL-230	Huntingdon, B.C.	Date of 1st deliveries for a 20-year term		300.5	109.7	2 194.0
Centra Gas Manitoba Inc.	GOL-2-93 (b)	Emerson, Man.	1993-04-01	2003-03-31	N/S	N/S	N/S
Centra Gas Ontario Inc.	GL-130 (c)	Sprague, Man.	1990-07-27	1990-10-31	640.0	62.1	3 150.0
			1990-11-01	2005-10-31	640.0	210.0	
	GOL-15-93 (c)	Sprague, Man.	1993-12-01	2018-11-30	N/S	N/S	N/S
Crestar Energy Marketing Corporation	GL-108	Emerson, Man.	1993-11-01	2001-10-31	422.5	154.0	1 504.0
Dartmouth Power Associates Limited Partnership	GL-164	Iroquois, Ont.	1992-11-01	2007-10-31	400.9	146.4	2 196.0
Direct Energy Marketing Limited	GL-188	Highwater, Que.	1992-10-29	1992-10-31	171.0	0.5	936.2
			1992-11-01	2006-10-31	171.0	62.4	
ENCO Gas, Ltd.	GL-203	Huntingdon, B.C.	1993-08-01	1993-10-31	155.1	7.2	3 258.0
			1993-11-01	1994-10-31	429.1	156.6	
			1994-11-01	2008-10-31	601.3	219.5	
Encogen Four Partners, L.P.	GL-152	Niagara Falls, Ont.	1993-09-01	1993-10-31	424.9	2.4	2 326.6
			1993-11-01	2007-10-31	424.9	155.1	
			2007-11-01	2008-08-31	424.9	129.2	
Encogen Northwest, L.P.	GL-190	Huntingdon, B.C.	1993-11-01	2008-10-31	271.6	99.1	1 441.3

D3. Licences and Long-Term Orders to Export Natural Gas as at 31 December 1993 (continued)

Exporter	Licence or Order Number	Point of Export	Term of Licence or Order		Maximum Volume		
			From	To	Daily (10 ³ m ³)	Annual (10 ⁶ m ³)	Term (10 ⁶ m ³)
Enron Gas Marketing, Inc.	GL-219	Chippawa, Ont.	Date of 1st deliveries to 2004-10-31		805.0	294.0	2 940.0
	GOL-1-93 (d)	Emerson, Man. & Ojibway, Ont.	1993-03-15	2004-11-05	N/S	N/S	N/S
Fulton Cogeneration Associates	GL-154	Niagara Falls, Ont.	1992-08-27	1992-10-31	170.0	11.2	868.0
			1992-11-01	2005-10-31	170.0	62.0	
Gaz Métropolitain, Inc.	GOL-16-93 (e)	St. Clair&Windsor, Ont.	1993-12-01	2003-11-30	N/S	N/S	N/S
Husky Oil Operations Ltd.	GL-144	Cornwall, Ont.	1992-08-01	1992-10-31	566.6	52.1	3 154.0
			1992-11-01	2007-11-01	566.6	206.8	
	GL-185	Huntingdon, B.C.	Date of 1st deliveries for a 17-year term		366.2	133.7	2 306.6
Imperial Oil Resources	GL-151	Iroquois, Ont.	1991-11-01	2006-10-31	991.5	362.0	5 432.0
Indeck-Oswego Limited Partnership	GL-216	Niagara Falls, Ont.	1993-03-30	1993-10-31	341.0	73.0	1 289.6
			1993-11-01	2005-10-31	341.0	123.4	
Indeck-Yerkes Limited Partnership	GL-215	Niagara Falls, Ont.	1993-03-16	1993-10-31	341.0	77.7	1 115.9
			1993-11-01	2005-10-31	341.0	123.4	
Kamine Beaver Falls Cogen Co., Inc.	GL-198	Iroquois, Ont.	1993-11-01	2008-10-31	456.1	167.1	2 494.9
Kamine Carthage Cogen Co., Inc.	GL-158	Chippawa, Ont.	1991-11-01	2006-10-31	402.2	139.5	2 093.7
Kamine Natural Dam Cogen Co., Inc.	GL-191	Iroquois, Ont.	1993-11-01	2008-10-31	348.4	117.8	1 767.1
Kamine South Glens Falls Cogen Co., Inc.	GL-159	Emerson, Man.	1991-11-01	2006-10-31	402.3	139.5	2 093.7
Kamine Syracuse Cogen Co., Inc.	GL-199	Chippawa, Ont.	1993-11-01	2008-10-31	461.7	168.5	2 506.8
KannGaz Producers Ltd.	GL-77	Niagara Falls, Ont.	1987-11-01	1993-10-31	3 540.0	1 292.1	11 175.9
			1993-11-01	1993-12-14	3 540.0	155.1	
			1993-12-15	1994-10-31	2 831.8	909.6	
			1994-11-01	2001-10-31	2 831.8	1 033.6	
	GL-229	Niagara Falls, Ont.	1993-12-15	1994-10-31	708.2	227.5	2 391.1
			1994-11-01	2002-10-31	708.2	258.5	
Mobil Oil Canada, Ltd.	GL-145	Huntingdon, B.C.	1991-01-24	1991-10-31	327.5	92.0	1 195.5
			1991-11-01	2000-10-31	327.5	119.5	

D3. Licences and Long-Term Orders to Export Natural Gas as at 31 December 1993 (continued)

Exporter	Licence or Order Number	Point of Export	Term of Licence or Order		Maximum Volume		
			From	To	Daily (10 ³ m ³)	Annual (10 ⁶ m ³)	Term (10 ⁶ m ³)
Mobil Oil Canada, Ltd.	GL-146	Huntingdon, B.C.	1991-01-24	1991-10-31	136.5	38.4	1 145.6
			1991-11-01	1992-10-31	136.5	49.8	1 145.6
			1992-11-01	1995-10-31	272.9	99.6	1 145.6
			1995-11-01	2000-10-31	409.4	149.4	
	GL-147	Huntingdon, B.C.	1991-01-24	1991-10-31	272.9	76.7	1 843.0
			1991-11-01	1992-10-31	272.9	99.6	1843.
			1992-11-01	2003-10-31	409.4	149.4	
	GL-165	Emerson, Man.	1992-04-30	1992-10-31	563.5	103.7	2 056.9
			1992-11-01	2000-10-31	563.5	205.7	
New England Power Company	GL-160	Iroquois, Ont.	1991-11-01	2008-10-31	1 700.0	621.0	9 308.0
New York State Electric & Gas Corporation	GL-195	Chippawa, Iroquois, & Niagara Falls, Ont. & Napierville, Que.	Date of 1st deliveries for a 12-year term		225.0	93.1	1 117.0
	GL-220	Chippawa, Ont.	Date of 1st deliveries for a 10-year term		283.3	103.5	1 035.0
Norcen Energy Resources Limited	GL-115	Emerson, Man.	1989-08-24	1989-10-31	396.6	27.4	1 841.0
			1989-11-01	2001-10-31	396.6	144.5	
	GL-116	Emerson, Man.	1990-05-03	1990-10-31	184.1	33.5	1 034.0
			1990-11-01	1994-10-31	184.1	67.2	
			1994-11-01	2001-10-31	283.3	104.8	
North Canadian Oils	GL-142	Emerson, Man.	1990-11-08	1991-10-31	283.3	101.4	1 068.8
			1991-11-01	2000-10-31	283.3	103.4	
	GL-143	Emerson, Man.	1990-11-08	1991-10-31	283.3	101.4	1 068.8
			1991-11-01	2000-10-31	283.3	103.4	
Northern Minnesota Utilities	GL-171	Sprague, Man.	1992-04-30	1992-10-31	917.8	168.9	3 685.0
			1992-11-01	2002-10-31	917.8	335.0	
Northridge Petroleum Marketing Inc.	GOL-03-92 (f)	Emerson, Man.	1992-03-01	2012-02-29	N/S	N/S	N/S
Pan-Alberta Gas Ltd.	GL-95	Emerson, Man. & Niagara Falls, Ont. combined maximum	1987-11-01	1996-10-31	4 332.5	1 581.4	16 604.7
			1996-11-01	1997-10-31	3 249.4	1 186.0	
			1997-11-01	1998-10-31	2 166.2	790.7	
			1998-11-01	1999-10-31	1 083.1	395.4	
	Maximum permitted at Niagara Falls, Ont. as part of combined Emerson/Niagara Falls volumes		1987-11-19	1996-10-31	1 442.7	526.6	
			1996-11-01	1997-10-31	1 082.1	394.9	
			1997-11-01	1998-10-31	721.3	263.3	
			1998-11-01	1999-10-31	360.7	131.7	

D3. Licences and Long-Term Orders to Export Natural Gas as at 31 December 1993 (continued)

Exporter	Licence or Order Number	Point of Export	Term of Licence or Order		Maximum Volume		
			From	To	Daily (10 ³ m ³)	Annual (10 ⁶ m ³)	Term (10 ⁶ m ³)
Pan-Alberta Gas Ltd.	GL-97	Monchy, Sask.	1984-12-20	1985-10-31	24 928.5	7 582.8	75 296.7
			1985-11-01	2001-10-31	24 928.5	8 294.4	
	GL-106	Kingsgate, B.C.	1988-11-01	2012-10-31	7 478.6	2 488.3	59 719.2
Pawtucket Power Associates Limited Partnership	GL-149	Iroquois, Ont.	1991-11-01	2006-10-31	362.5	132.4	1 986.0
Petro-Canada Inc.	GL-186	Huntingdon, B.C.	1993-11-01	2011-10-31	409.6	150.0	2 580.9
			2011-11-01	2011-12-31	409.6	25.0	
Poco Petroleum Ltd.	GL-117	Emerson, Man.	1989-08-24	1989-10-31	708.2	48.9	1 706.1
			1989-11-01	1990-11-07	708.2	258.5	
			1990-11-08	1991-10-31	424.9	152.1	
			1991-11-01	2000-10-31	424.9	155.1	
	GL-118	Emerson, Man.	1989-08-24	1989-10-31	708.2	48.9	2 248.9
			1989-11-01	1990-11-07	708.2	258.5	
			1990-11-08	1991-10-31	424.9	152.1	
			1991-11-01	1992-10-28	424.9	153.8	
			1992-10-29	1992-10-31	424.9	1.3	
			1992-11-01	2004-10-31	424.9	155.1	
	GL-173	Huntingdon, B.C.	1992-06-11	1992-10-31	424.9	60.8	1 138.4
			1992-11-01	2000-10-31	424.9	155.1	
			2000-11-01	2001-08-11	424.9	120.7	
	GL-174	Huntingdon & Kingsgate, B.C.	1992-06-11	1992-10-31	566.6	81.0	1 583.0
			1992-11-01	2000-10-31	566.6	206.8	
			2000-11-01	2001-06-10	566.6	126.4	
	GL-205	Kingsgate, B.C.	1993-11-01	2002-10-31	445.1	138.8	869.5
			2002-11-01	2003-09-30	445.1	126.6	
Progas Limited	GL-98	Emerson, Man. & Monchy, Sask. com- bined maximum	1986-08-13	1986-10-31	9 440.9	2 583.2	30 064.3
			1986-11-01	1987-10-31	7 552.7	2 480.0	
			1987-11-01	1993-10-31	9 440.9	3 100.0	
			1993-11-01	2000-10-31	7 316.9	2 325.0	
		Maximum permitted at Monchy, Sask. as part of combined Emerson/Monchy volumes	1986-08-13	1986-10-31	6 797.4	2 480.0	8 718.7
			1986-11-01	1987-10-31	3 776.3	1 240.0	
			1987-11-01	1993-10-31	2 124.6	899.0	
			1993-11-01	2000-10-31	2 124.6	674.3	
	GL-101	Niagara Falls, Ont.	1989-05-01	1989-10-31	1 420.0	260.6	10 340.0
			1989-11-01	2009-10-31	1 420.0	517.0	
	GL-109	Iroquois & Niagara Falls, Ont.	1991-05-01	1991-10-31	708.2	130.3	5 170.0
			1991-11-01	2011-10-31	708.2	258.5	

D3. Licences and Long-Term Orders to Export Natural Gas as at 31 December 1993 (continued)

Exporter	Licence or Order Number	Point of Export	Term of Licence or Order		Maximum Volume		
			From	To	Daily (10 ³ m ³)	Annual (10 ⁶ m ³)	Term (10 ⁶ m ³)
Progas Limited	GL-129	Niagara Falls, Ont.	1990-07-27	1990-10-31	2 861.1	277.5	15 665.3
			1990-11-01	1992-10-31	2 861.1	1 044.3	
			1992-11-01	2006-10-31	2 521.1	920.2	
	GL-161	Iroquois, Ont.	1992-11-01	2010-10-31	708.2	258.4	4 800.4
			2010-11-01	2011-04-30	708.2	128.2	
	GL-178	Niagara Falls, Ont.	1992-11-01	2007-10-31	339.9	124.1	1 861.1
	GL-179	Emerson, Man.	1992-11-01	2002-10-31	212.5	77.5	775.5
	GL-231	Emerson, Man.	1993-11-01	2003-10-31	2 124.6	775.5	7 755.0
Ramapo Resources Inc.	GL-139	Niagara Falls, Ont.	1990-11-08	1991-10-31	169.0	60.5	925.5
			1991-11-01	2005-10-31	169.0	61.7	
San Diego Gas & Electric Company & Bow Valley Industries	GL-206	Kingsgate, B.C.	1993-10-31	2004-10-31	138.5	50.9	560.0
San Diego Gas & Electric Company & Canadian Hunter Marketing Ltd.	GL-207	Huntingdon, B.C.	1993-10-31	2003-10-31	557.6	203.5	2 035.0
San Diego Gas & Electric Company & Husky Oil Operations	GL-208	Kingsgate, B.C.	1993-11-01	2001-10-31	609.9	222.6	2 226.0
San Diego Gas & Electric Company & Summit Resources Ltd.	GL-209	Kingsgate, B.C.	1993-11-01	2003-10-31	195.1	71.2	570.0
Saranac Power Partners L.P. & Shell Canada Limited	GL-197	Napierville, Que.	1993-11-01	2008-10-31	1 445.0	529.0	7 125.0
Selkirk Cogen Partners, L.P.	GL-157	Iroquois, Ont.	1992-11-01	2007-10-31	651.5	237.8	3 685.9
			2007-11-01	2008-04-30	651.5	117.9	
Shell Canada Limited	GL-100	Highwater, Que.	1987-11-01	1998-10-31	1 110.0	300.0	5 900.0
			1998-11-01	1999-03-31	1 110.0	167.6	
		Iroquois, Ont.	1987-11-01	1998-10-31	1 390.0	400.0	5 900.0
			1998-11-01	1999-03-31	1 390.0	209.9	
	GL-119	Emerson, Man.	1989-08-24	1989-10-31	424.9	29.3	2 234.0
			1989-11-01	2003-10-31	424.9	155.1	
	GL-120	Emerson, Man.	1989-08-24	1989-10-31	424.9	29.3	2 250.0
			1989-11-01	2004-10-31	424.9	155.1	

D3. Licences and Long-Term Orders to Export Natural Gas as at 31 December 1993 (continued)

Exporter	Licence or Order Number	Point of Export	Term of Licence or Order		Maximum Volume		
			From	To	Daily (10 ³ m ³)	Annual (10 ⁶ m ³)	Term (10 ⁶ m ³)
Shell Canada Limited	GL-134	Niagara Falls, Ont.	1990-07-27	1990-10-31	450.0	43.7	2 755.0
			1990-11-01	2010-10-31	450.0	145.0	
			2010-11-01	2011-08-31	450.0	95.9	
	GL-180	Monchy, Sask.	1992-08-27	1992-10-31	278.0	18.3	1 014.0
			1992-11-01	2001-10-31	278.0	102.0	
			2001-11-01	2002-08-26	278.0	83.1	
	GL-181	Monchy, Sask.	1992-08-27	1992-10-31	580.0	38.3	3 181.0
			1992-11-01	2006-10-31	580.0	212.0	
			2006-11-01	2007-08-26	580.0	173.4	
Southern California Edison Company & AEC Oil and Gas Company	GL-210	Kingsgate, B.C.	1993-11-01	2008-10-31	1 445.0	529.0	7 913.0
Southern California Edison Company & Imperial Oil Resources	GL-211	Kingsgate, B.C.	1993-11-01	2008-10-31	1 445.0	529.0	7 913.0
Southern California Edison Company & Shell Canada Limited	GL-212	Kingsgate, B.C.	1993-11-01	2008-10-31	1 445.0	529.0	7 913.0
Southern California Edison Company & Western Gas Marketing Limited	GL-213	Kingsgate, B.C.	1993-11-01	2008-10-31	1 445.0	529.0	7 913.0
Summit Resources Limited	GL-214	Kingsgate, B.C.	1993-11-01	1994-03-31	219.2	21.8	300.0
			1994-04-01	1994-09-30	141.3	26.5	
			1994-10-01	1994-10-31	219.2	4.5	
			1994-11-01	1995-03-31	219.2	21.8	
			1995-04-01	1995-09-30	141.3	26.5	
			1995-10-01	1995-10-31	219.2	4.5	
			1995-11-01	1996-03-31	219.2	21.8	
			1996-04-01	1996-09-30	141.3	26.5	
			1996-10-01	1996-10-31	219.2	4.5	
			1996-11-01	1997-03-31	219.2	21.8	
			1997-04-01	1997-09-30	141.3	26.5	
			1997-10-01	1997-10-31	219.2	4.5	
			1997-11-01	1998-03-31	219.2	21.8	
			1998-04-01	1998-09-30	141.3	26.5	
			1998-10-01	1998-10-31	219.2	4.5	
			1998-11-01	1999-03-31	219.2	21.8	
			1999-04-01	1999-09-30	141.3	26.5	
			1999-10-01	1999-10-31	219.2	4.5	
			1999-11-01	2000-03-31	219.2	21.8	
			2000-04-01	2000-09-30	141.3	26.5	
			2000-10-01	2000-10-31	219.2	4.5	
			2000-11-01	2001-03-31	219.2	21.8	
			2001-04-01	2001-09-30	141.3	26.5	
			2001-10-01	2001-10-31	219.2	4.5	

D3. Licences and Long-Term Orders to Export Natural Gas as at 31 December 1993 (continued)

Exporter	Licence or Order Number	Point of Export	Term of Licence or Order		Maximum Volume		
			From	To	Daily (10 ³ m ³)	Annual (10 ⁶ m ³)	Term (10 ⁶ m ³)
Talisman Energy Inc.	GL-196	Huntingdon, B.C.	Date of 1st deliveries for a 17-year term		504.1	184.0	312.8
TransCanada Pipelines Limited	GL-83	Niagara Falls, Ont.	1984-11-01	1986-10-31	1 133.1	414.0	1 6371.0
			1986-11-01	2002-10-31	2 620.3	959.0	
			2002-11-01	2003-01-15	2 620.3	199.1	
	GL-84	Niagara Falls, Ont.	1987-11-01	1988-10-31	142.0	51.8	2 378.0
			1988-11-01	1997-10-31	708.0	258.4	
	GL-86	Emerson, Man.	1987-11-01	1990-10-31	2 832.8	1034.0	10 886.4
			1990-11-01	1991-10-31	2 832.8	1036.8	
			1991-11-01	1994-10-31	2 832.8	1034.0	
			1994-11-01	1995-10-31	2 832.8	1036.8	
			1995-11-01	1996-10-31	2 832.8	1034.0	
			1996-11-01	1997-10-31	2 188.7	798.9	
			1997-11-01	1998-10-31	1 416.4	517.0	
			1998-11-01	1999-10-31	708.2	259.2	
	GL-87	Emerson, Man.	1987-11-01	1990-10-31	2 832.8	1034.0	10 886.4
			1990-11-01	1991-10-31	2 832.8	1036.8	
			1991-11-01	1994-10-31	2 832.8	1034.0	
			1994-11-01	1995-10-31	2 832.8	1036.8	
			1995-11-01	1996-10-31	2 832.8	1034.0	
			1996-11-01	1997-10-31	2 188.7	798.9	
			1997-11-01	1998-10-31	1 416.4	517.0	
			1998-11-01	1999-10-31	708.2	259.2	
	GL-110	Niagara Falls & Iroquois, Ont.	1991-05-01	1991-10-31	708.2	130.3	5 443.2
			1991-11-01	2012-10-31	708.2	258.5	
	GL-121	Emerson, Man.	1989-08-24	1989-10-31	424.9	29.3	2 326.5
			1989-11-01	2003-10-31	424.9	155.1	
	GL-122	Emerson, Man.	1989-08-24	1989-10-31	424.9	29.3	2 326.5
			1989-11-01	2004-10-31	424.9	155.1	
	GL-187	Emerson, Man.	1992-08-27	1992-10-31	2 785.0	183.8	12 035.0
			1992-11-01	2005-10-31	2 785.0	875.0	
	GOL-2-91 (g)	Emerson, Man.	1991-11-01	2005-10-31	N/S	N/S	N/S
Unigas Corporation	GL-162	Chippawa, Ont.	1993-11-01	2003-10-31	453.2	165.5	1 654.2

D3. Licences and Long-Term Orders to Export Natural Gas as at 31 December 1993 (continued)

Exporter	Licence or Order Number	Point of Export	Term of Licence or Order		Maximum Volume		
			From	To	Daily (10 ³ m ³)	Annual (10 ⁶ m ³)	Term (10 ⁶ m ³)
Unigas Corporation	GL-166	Monchy, Sask.	1992-04-30 1992-11-01	1992-10-31 2001-11-01	2 820.0 2 820.0	518.9 1 030.0	10 300.0
	GL-221	Kingsgate, B.C.	1993-11-01	1999-10-31	396.6	144.8	868.6
	GL-222	Kingsgate, B.C.	Date of 1st deliveries to 1999-10-31		136.5	49.8	249.0
	GL-223	Kingsgate, B.C.	Date of 1st deliveries to 1999-10-31		115.4	42.1	210.5
	GL-224	Kingsgate, B.C.	Date of 1st deliveries to 1999-10-31		115.4	42.1	210.5
	GOL-18-92 (h)	Huntingdon, B.C.	1992-10-01	2002-09-15	N/S	N/S	N/S
	GOL-19-92 (e)	Monchy, Sask & St. Clair, Ont.	1992-10-01	2002-09-15	N/S	N/S	N/S
	GOL-20-92 (e)	Emerson, Man.	1992-10-01	2002-09-15	N/S	N/S	N/S
	GOL-21-92 (i)	Cardston, Alta.	1992-10-01	2002-09-15	N/S	N/S	N/S
Washington Water Power Company	GL-204	Kingsgate, B.C.	1993-11-01	1994-10-31	1 013.0	277.0	3 357.0
			1994-11-01	1995-10-31	1 100.0	302.0	
			1995-11-01	1996-10-31	1 190.0	328.0	
			1996-11-01	1997-10-31	1 285.0	356.0	
			1997-11-01	1998-10-31	1 380.0	382.0	
			1998-11-01	1999-10-31	1 471.0	408.0	
			1999-11-01	2000-10-31	1 563.0	434.0	
			2000-11-01	2001-10-31	1 145.0	275.0	
			2001-11-01	2002-10-31	1 201.0	290.0	
Western Gas Marketing Limited	GL-128	Cornwall, Ont.	1990-07-27	1990-10-31	331.0	32.1	1 820.0
			1990-11-01	2005-10-31	331.0	121.3	
	GL-141	Emerson, Man.	1990-11-08	1991-10-31	424.9	152.1	2 326.5
			1991-11-01	2005-10-31	424.9	155.1	
	GL-163	Niagara Falls, Ont.	1992-11-01	2007-10-31	283.0	103.7	1 552.0
	GL-167	Emerson, Man.	1992-05-01	1992-10-31	1 346.0	247.7	4 920.0
			1992-11-01	2001-10-31	1 346.0	492.0	
	GL-168	Emerson, Man.	1992-05-01	1992-10-31	1 416.0	85.2	850.0
			1992-11-01	1995-10-31	1 416.0	170.0	
			1995-11-01	1996-03-31	1 416.0	70.3	

D3. Licences and Long-Term Orders to Export Natural Gas as at 31 December 1993 (continued)

Exporter	Licence or Order Number	Point of Export	Term of Licence or Order		Maximum Volume		
			From	To	Daily (10 ³ m ³)	Annual (10 ⁶ m ³)	Term (10 ⁶ m ³)
Western Gas Marketing Limited	GL-169	Monchy, Sask.	1992-05-01	1992-10-31	708.0	130.3	2 590.0
			1992-11-01	2001-10-31	708.0	259.0	
	GL-170	Emerson, Man.	1992-05-01	1992-10-31	283.0	52.1	978.2
			1992-11-01	2000-10-31	283.0	103.0	
			2000-11-01	2001-05-01	283.0	51.2	
	GL-172	Philipsburg, Que.	1992-04-30	1992-10-31	906.0	166.7	4 980.0
			1992-11-01	2006-10-31	906.0	332.0	
	GL-175	Iroquois, Ont.	1992-08-27	1992-10-31	1 445.0	95.4	7 910.0
			1992-11-01	2005-10-31	1 445.0	529.0	
	GL-200	Niagara Falls, Ont.	Date of 1st deliveries for a 15-year term		509.0	186.6	2 800.0
	GL-201	Emerson, Man.	1993-02-23	1993-10-31	906.5	228.2	1 272.0
			1993-11-01	1996-10-31	906.5	331.8	
	GL-202	Emerson, Man.	1993-02-23	1993-10-31	4 853.0	1 221.3	13 892.0
			1993-11-01	2000-10-31	4 853.0	1 776.0	

- a) This order authorizes an export of natural gas for storage in the U.S. and for subsequent import near Huntingdon, B.C. through exchange arrangements with other exporters
- b) This order authorizes an export of natural gas for subsequent import near Emerson, Man.
- c) This order authorizes an export of natural gas for subsequent import near Rainy River, Ont.
- d) This order authorizes an export of natural gas for subsequent import near St. Clair, Ont.
- e) This order authorizes an export of natural gas for subsequent import near St. Clair and Windsor, Ont.
- f) This order authorizes an export of natural gas for subsequent import near Samia and St. Clair, Ont.
- g) This order authorizes an export of natural gas for subsequent import near Samia and Sault Ste. Marie, Ont.
- h) This order authorizes an export of natural gas for subsequent import near Huntingdon and Kingsgate, B.C.
- i) This order authorizes an export of natural gas for subsequent import near Willow Creek, Sask.

N/S Not Specified

D4. Licences and Long-Term Orders to Import Natural Gas as at 31 December 1993

Exporter	Licence or Order Number	Point of Export	Term of Licence or Order		Maximum Volume		
			From	To	Daily (10 ³ m ³)	Annual (10 ⁶ m ³)	Term (10 ⁶ m ³)
Canadian Western Natural Gas Company Limited	GO-117-88	Coutts, Alta.	1989-01-01	2005-12-31	30.0	N/S	N/S
Coastal Gas Marketing Company	GOL-1 (a)	Samia & Windsor, Ont.					
Enron Gas Marketing Inc.	GOL-26-92 (b)	Willow Creek, Sask.	1992-11-06	2004-11-05	N/S	N/S	N/S
Gaz Métropolitain, Inc.	GOL-14-93 (c)	St. Clair & Windsor, Ont.	1993-12-01	2003-11-30	N/S	N/S	N/S
National Steel Corporation	GOL-28-92 (d)	Windsor, Ont.	1992-12-18	1996-12-17	N/S	N/S	N/S
Natural Gas Clearinghouse	GOL-12-93 (e)	Emerson, Man. & Willow Creek, Sask.	1993-11-01	1997-12-31	N/S	N/S	N/S
Northern Minnesota Utilities	GOL-17-92 (f)	Rainy River, Ont.	1992-12-01	2002-10-31	N/S	N/S	N/S
Northern Natural Gas Company	GOL-14-92 (g)	Willow Creek, Sask.	1992-11-01	1997-12-31	N/S	621.0	N/S
Rochester Gas and Electric Corporation	GOL-12-92 (h)	Samia, Ont.	1993-11-01	2008-10-31	N/S	N/S	N/S
Tennessee Gas Pipeline Company	GOL-11-92 (i)	St. Clair, Ont.	1992-11-01	2002-09-30	N/S	N/S	N/S
Unigas Corporation	GOL-22-92 (a)	St. Clair & Windsor, Ont.	1992-10-01	2002-09-15	N/S	N/S	N/S

a) This order authorizes an import of natural gas for subsequent export near Iroquois and Niagara Falls, Ont.

b) This order authorizes an import of natural gas for subsequent export near Emerson, Man. and Monchy, Sask. to serve markets in the U.S. Midwest

c) This order authorizes an import of natural gas for subsequent export near St. Clair and Windsor, Ont.

d) This order authorizes an import of natural gas for subsequent export near Windsor, Ont.

e) This order authorizes an import of natural gas for subsequent export near Emerson, Man. and Willow Creek, Sask.

f) This order authorizes an import of natural gas for subsequent export near Fort Francis, Ont.

g) This order authorizes an import of natural gas for subsequent export near Emerson, Man.

h) This order authorizes an import of natural gas for subsequent export near Chippawa, Ont.

i) This order authorizes an import of natural gas for subsequent export near Niagara Falls, Ont.

N/S Not Specified

D5. Natural Gas Exports by Export Point

(Million Cubic Metres)

Export Point	1989	1990	1991	1992	1993(a)
Kingsgate	14 215	14 518	14 082	13 874	13 870
Monchy	9 004	9 529	10 572	12 488	13 864
Emerson	7 097	8 457	9 763	10 326	11 344
Niagara Falls	1 681	2 550	5 065	7 181	7 121
Huntingdon	4 889	4 563	6 106	7 039	7 563
Iroquois	0	0	101	4 597	6 680
Other	1 025	1 072	2 158	2 522	2 579
Total	37 912	40 689	47 846	58 027	63 021

a) Estimate

D6. Total Net Exports of Propane and Butanes (Cubic Metres)

(Cubic Metres)

Exporter	Propane		Butanes	
	1992 Actual	1993 Preliminary	1992 Actual	1993 Preliminary
Amoco Canada Petroleum Company Ltd. (a)	1 703 390	1 984 500	1 085 545	981 600
Atlantic Speedy Propane Limited	5 181	5 400	N/A	N/A
Burnwell Gas of Canada, Ltd.	59 409	66 000	N/A	N/A
Canadian Enterprise Gas Products Ltd.	26 631	17 500	12 018	7 900
CanPet Marketing Ltd.	151 975	108 000	34 512	24 800
CanStates Energy	29 081	69 900	61 174	6 700
Commonwealth Petroleum Co.	28 502	900	N/A	N/A
Consumers' Co-operative Refineries Limited	3 906	200	N/A	N/A
Desticon Gas Liquids Enterprises Ltd.	121	2 200	6 798	11 600
Dominion Propane Corp.	3 815	4 100	N/A	N/A
Dow Chemical Canada Inc.	12 600	N/A	N/A	N/A
Elbow River Resources Ltd.	N/A	2 700	31 183	21 900
Energy Transportation Inc.	140 458	185 000	67 692	19 700
Enron Gas Liquids Canada, Ltd.	62 551	37 400	4 020	N/A
Ferrellgas, Inc.	80 070	93 700	N/A	N/A
Gibson Gas Liquids Ltd.	18 841	19 900	8 943	27 800
Gulf Canada Resources Ltd.	56 564	39 000	34 530	7 400
Home Oil Company Limited	12 042	13 200	20 490	N/A
Husky Oil Trading Company	N/A	200	N/A	N/A
ICG Propane Inc.	13 610	15 700	N/A	600
Imperial Gas Liquids	442 465	437 000	96 365	73 500
Kinetic Resources (LPG)	357 695	381 100	91 334	160 000
Koch Hydrocarbons Canada	N/A	300	34 548	63 100
M-P Oils	80 422	84 900	N/A	N/A
Midwest Products Supply Co., Inc.	1 747	N/A	N/A	N/A
Mobil Oil Canada	41 277	39 200	28 652	8 700
NGL Supply Co. Ltd.	154 477	95 300	103 694	138 700
Norcal Gas Liquids Ltd.	14 168	14 500	N/A	N/A
Northridge Gas Liquids Marketing Inc.	38 779	43 100	32 813	14 700
Petro-Canada Hydrocarbons Inc.	460 105	489 000	288 369	312 900
Petrogas Marketing Ltd.	34 328	38 400	34 678	34 800
Pétromont and Company, Limited	41 976	40 800	N/A	N/A
Petrowest Petroleum Ltd.	21 473	40 900	246	N/A
Shell Canada Limited	216 822	244 600	188 289	37 700
Stittco Energy Limited	10 752	11 100	2 952	2 000
Sunoco Inc.	N/A	N/A	1 586	N/A
Suburban Propane Ltd.	23 878	16 000	N/A	N/A
Vision Energy	19 686	24 500	N/A	N/A
Total	4 365 797	4 666 200	2 270 431	1 956 100

a) Includes net export volumes under licences.

N/A Not Applicable

Appendix E

Electricity

E1. Certificates and Permits Issued During 1993 with Respect to International Power Lines

No Certificates or Permits were issued during 1993.

E2. Amending Orders Issued During 1993 Relating to International Power Lines

No Amending Orders were issued during 1993.

E3. Licences and Orders Issued During 1993 Relating to the Export of Electricity

No Licences were issued during 1993.

E3(b) Amending Orders Relating to Export Licences

Applicant	Order No.	Issued	Comments
Hydro-Québec	AO-1-EL-153	93-06-11	Modification to allow exports to any customer in service area and modification to authorized international power lines allowed
	AO-3-EL-167	93-06-11	Modification to allow exports to any customer in service area and modification to authorized international power lines allowed
	AO-4-EL-169	93-06-11	Modification to allow exports to any customer in service area and modification to authorized international power lines allowed
	AO-4-EL-169	93-06-15	Modification to export limits

E4. Permits and Orders Issued During 1993 Relating to the Export of Electricity

E4(a) Permits Issued

Applicant	Permit No.	Class	Kilowatts	Annual Megawatt Hours	Term From	To	Issued
British Columbia Hydro and Power Authority	EPE-49	Border Accommodation	2 200	1 000	93-10-01	96-09-30	93-08-27
	EPE-50	Border Accommodation	6 500	20 000(a)	93-10-01	97-09-30	93-08-27
Cominco Ltd.	EPE-55	Carrier Transfer	—	50 000	94-01-01	98-12-31	93-12-22
	EPE-56	Firm	—	250 000	94-01-01	98-12-31	93-12-22
	EPE-57	Interruptible	—	1 000	94-01-01	98-12-31	93-12-22
	EPE-58	Circulating Energy	—	1 000	94-01-01	98-12-31	93-12-22
Fraser Inc	EPE-51	Firm	60 000	400 000	94-01-01	96-12-31	93-09-16
Manitoba Hydro	EPE-45	Firm	1 900 000	16 650 000(b)	93-05-01	05-10-31	93-02-10
	EPE-46	Interruptible	—	16 650 000(c)	93-05-01	05-10-31	93-02-10
	EPE-52	Firm	10	44 000(d)	95-05-01	01-10-31	93-12-09
New Brunswick Power	EPE-47	Firm	20 000	175 200	93-05-27	03-10-31	93-05-27
	EPE-48	Interruptible	3 400	29 000	93-06-09	02-10-31	93-06-09
NW Energy (Williams Lake)	EPE-53	Firm	65 000	90 000(e)	93-11-26	94-01-31	93-11-25
	EPE-54	Interruptible	—	90 000(f)	93-11-26	94-01-31	93-11-25

E4(b) Amending Orders Relating to Export Permits

Applicant	Order No.	Issued	Comments
Comwall Electric	AO-1-EPE-38	93-11-25	Modification to export limits
Manitoba Hydro	AO-1-EPE-45	93-12-09	Modification to export limits
	AO-1-EPE-46	93-12-09	Modification to export limits
	AO-1-EPE-52	93-12-17	Correction of condition
New Brunswick Power	AO-1-EPE-48	93-07-09	Modification to export limits
Ontario Hydro	AO-1-EPE-21	93-03-18	Addition of two customers
	AO-2-EPE-21	93-06-10	Modification to the term of the permit
	AO-3-EPE-21	93-07-30	Addition of a customer
	AO-4-EPE-21	93-09-22	Addition of two customers
	AO-5-EPE-21	93-12-23	Addition of a customer

E4(c) Revoking Orders

Applicant	Order No.	Issued	Comments
New Brunswick Power	RO-1-EPE-19	93-05-27	Order revoking Permit EPE-19 effective 27 May 1993

- a) Not to exceed 20 000 MW.h during the period 1 October 1993 to 30 September 1994, 21 000 MW.h during the period 1 October 1994 to 30 September 1995 and 22 000 MW.h during the period 1 October 1995 to 30 September 1996.
- b) Less actual exports under Permits EPE-33, EPE-34,EPE-35, EPE-46 and Licences EI-170 and EL-174.
- c) Less actual exports under Permits EPE-33, EPE-34,EPE-35, EPE-45 and Licences EI-170 and EL-174.
- d) Not to exceed in any summer season (1 May through 31 October) 44 000 MW.h during 1995 and 1996, 177 000 MW.h during 1997 and 1998, 199 000 MW.h during 1999 and 2000 and 221 000 MW.h during 2001.
- e) Less actual exports under Permit EPE-54
- f) Less actual exports under Permit EPE-53

E5. Exports 1993

(Megawatt Hours)

Exporter	Licence Number	Licence Authorization		Firm	Gross Energy Exported		Exchange(a)	Value of Export (\$)	
		Firm	Interruptible		Interruptible			Firm	Interruptible
New Brunswick									
Fraser Inc.	EPE-07*	400 000	—	309 855	—	—	—	18 156 579	—
Maine and New Brunswick Electrical Power Company, Limited	EL-177	200 000	—	118 367	—	—	—	2 964 063	—
New Brunswick Power	EL-138	876 000	—	—	—	—	—	—	—
	EL-150	1 138 000	—	—	—	—	—	—	—
	EPE-14	876 000	—	763 896	—	- 15 283	38 002 319	—	—
	EPE-15	—	6 482 400(b)	—	387 913	- 23 213	—	11 433 653	—
	EPE-16	—	400 000	—	101 042	60 199	—	3 624 731	—
	EPE-17	250 000	—	—	—	36 408	—	—	—
	EPE-18	—	179 000	—	24 938	954	—	1 042 983	—
	EPE-19**	201 480	—	31 316	—	- 649	2 386 581	—	—
	EPE-28	1 000	—	263	—	—	23 456	—	—
	EPE-47	175 200	—	33 634	—	—	2 349 530	—	—
	EPE-48	—	29000	—	7 258	—	—	454 619	—
Total				1 257 331	521 151	58 416	63 882 528	16 555 986	
Quebec									
Hydro-Québec	EL-151	—	11 000 000	—	—	—	—	—	—
	EL-152	—	23 564 000(c)	—	407 582	—	—	11 902 575	—
	EL-153	—	23 564 000(c)	—	2 933 127	- 193 200	—	72 274 141	—
	EL-156	25 000	—	—	—	—	—	—	—
	EL-165	—	3 000 000	—	—	—	—	—	—
	EL-166	—	4 000 000	—	—	—	—	—	—
	EL-167	—	6 920 000(d)	—	9 152	- 832	—	215 941	—
	EL-168	1 314 000	—	949 299	—	—	34 221 707	—	—
	EL-169	—	1 752 000(e)	—	265 328	- 133	—	6 789 445	—
	EL-176	9 000 000	—	6 445 398	—	—	141 607 447	—	—
	EL-178	3 000 000	—	—	—	1 495 943	11 067 905	—	—
	EL-179	350 000	—	182 566	—	—	12 509 784	—	—
	EL-181	400 000	—	341 663	—	—	27 166 288	—	—
	EL-182	406 000	—	171 352	—	—	13 581 892	—	—
	EPE-20	10 512	—	1 228	—	—	89 546	—	—
Total				8 091 506	3 615 189	1 301 778	240 244 569	91 182 102	

E5. Exports 1993 (continued).

(Megawatt Hours)

Exporter	Licence Number	Licence Authorization		Firm	Gross Energy Exported		Exchange(a)	Value of Export (\$)	
		Firm	Interruptible		Interruptible			Firm	Interruptible
Ontario									
Boise Cascade Canada Ltd.	EPE-31	—	175 000	—	205	—	—	5 816	
Canadian Niagara Power Company Limited	EPE-36	250 000	—	243 924	—	—	6 352 414		
	EPE-37	250 000	—	—	—	151 862	—	—	
The Canadian Transit Company	EPE-29	50	—	—	—	—	—	—	
Cornwall Electric	EPE-38	—	40 000	—	20 270	—	—	446 684	
	EPE-39	—	233 000	—	—	—	—	—	
The Detroit and Windsor Subway Company	EPE-26	3 000	—	1 089	—	—	—	—	
Ontario Hydro	EL-134	—	10 000 000	—	—	1 790 168	—	—	
	EPE-21	—	15 000 000		4 698 090	254 785		124 798 296	
	EPE-24	15 000	—	450	—	—	900	—	
	EPE-25	200	—	36	—	—	3 412	—	
Total				245 499	4 718 565	2 196 815	6 356 726	125 250 796	

Manitoba

The Manitoba Hydro- Electric Board	EL-99	262 800	—	—	—	—	—	—
	EL-100	800 000	—	—	—	—	—	—
	EL-101	2 500 000	—	—	—	—	—	—
	EL-102	—	—	—	—	—	—	—
	EL-103	—	12 000 000(f)	—	1 810 529	48 888	—	28 261 995
	EL-170	3 405 000	—	2 212 150	—	—	101 006 208	—
	EL-174	883 000	—	99 433	—	—	5 586 839	—
	EPE-30	7 884	—	3 484	—	—	130 550	—
	EPE-32	15	—	8	—	—	700	—
	EPE-34	1 766 000	—	985 567	—	—	22 780 110	—
	EPE-45	16 650 000(g)	—	165 713	—	—	6 857 364	—
	EPE-46	—	16 650 000(g)	—	2 547 209	- 513 767	—	40 209 196
Total				3 466 355	4 357 738	- 464 879	136 361 771	68 471 191

E5. Exports 1993 (continued)

(Megawatt Hours)

Exporter	Licence Number	Licence Authorization		Firm	Gross Energy Exported		Exchange(a)	Value of Export (\$)	
		Firm	Interruptible		Interruptible	Firm		Interruptible	
Saskatchewan									
Saskatchewan	EL-118	438 000(h)	—	—	—	15 350	—	—	
Power Corporation	EL-119	—	876 000(i)	—	183 528	30 572	—	3 452 732	
	EL-120	876 000(i)	—	—	—	—	—	—	
Total					183 528	45 922		3 452 732	
British Columbia									
British Columbia	EPE-02*	15 164	—	14 678	—	—	709 432	—	
Hydro and Power	EPE-49	1 000	—	410	—	—	27 141	—	
Authority	EPE-27*	1 200	—	912	—	—	52 166	—	
	EPE-50	20 000	—	5 870	—	—	286 051	—	
	EPE-41	—	20 000 000(j)	—	813 686	899 870	—	32 304 783	
	EPE-42	6 000 000(k)	—	—	—	—	—	—	
	EPE-43	—	20 000 000(l)	—	—	83 941	—	—	
	EPE-44	6 000 000(m)	—	1 867 285	—	1 029 485	65 657 731	—	
	(n)	—	—	—	—	330 734	—	—	
Cominco Ltd.	EPE-09	50 000	—	—	—	—	—	—	
	EPE-10	250 000	—	—	—	—	—	—	
	EPE-11	—	1 000 000	—	204 478	117	—	7 419 751	
	EPE-12	—	1 000 000	—	—	—	—	—	
West Kootenay	EPE-13	50	—	15	—	—	1 289	—	
Power and Light Company, Limited									
NW Energy	EPE-53(o)	90 000(o)	—	—	—	—	—	—	
(Williams Lake)	EPE-54(p)	—	90 000(p)	—	—	—	—	—	
Total				1 889 170	1 018 164	2 344 147	66 733 810	39 724 534	
Total Canada(q)				14 949 861	14 414 335	5 482 199	513 089 432	344 637 341	

E5. Exports 1993 (continued)

- a) Exchange includes inadvertent and circulating flow, exchange, storage, adjustment transfer, and wheeling or carrier transfer which normally do not have associated revenue.
- b) Total exports should not exceed 6 482.4 GW.h less any amounts exported pursuant to another licence or order under which the energy is transmitted over the line authorized by Certificate EC-III-8.
- c) Total exports should not exceed 23 564 GW.h less any amounts exported pursuant to another licence under which the energy is transmitted over the lines authorized by Certificates EC-III-15 and EC-10.
- d) Total exports should not exceed 6 920 GW.h less any amounts exported pursuant to another licence under which the energy is transmitted over the lines authorized by Certificate EC-III-21.
- e) Total exports should not exceed 1 752 GW.h less any amounts exported under Licence EL-168.
- f) Total exports should not exceed 12 000 GW.h less any amounts exported under Licences EL-99, EL-100, EL-101 and EL-102.
- g) Total exports should not exceed 16 650 GW.h less any amounts under any licence or permit except a Border accommodation.
- h) Energy to be returned.
- i) Total exports under Licences EL-119 and EL-120 should not exceed 876 GW.h. when combined together.
- j) Total exports should not exceed 20 000 GW.h less any amounts exported under Permits EPE-42, EPE-43 and EPE-44.
- k) Total exports should not exceed 6 000 GW.h less any amounts under EPE-44.
- l) Total exports should not exceed 20 000 GW.h less any amounts exported under Permits EPE-41, EPE-42 and EPE-44.
- m) Total exports should not exceed 6 000 GW.h less any amounts under EPE-42.
- n) Energy exported in accordance with the Skagit River Valley Treaty which is not under the Board's jurisdiction.
- o) Total exports should not exceed 90 000 MW.h less any amounts under EPE-54.
- p) Total exports should not exceed 90 000 MW.h less any amounts under EPE-53.
- q) Excludes \$6 159 977 revenue for wheeling, transmission, unit rental and storage transfer charges.
- * Expired during 1993.
- ** Revoked during 1993.

E6. Electricity Trade Between Canada and the United States (a)

(By Province, Gigawatt Hours)

Province	Region/State	Export (b)	Import (c)	Net Export (b)- (c)
New Brunswick	Maine	1 014	73	941
	Massachusetts	764	0	764
Total New Brunswick		1 778	73	1 705
Quebec	Vermont	1 910	427	1 483
	New England (d)	6 455	144	6 311
	New York	3 341	56	3 285
Total Quebec		11 706	627	11 079
Ontario	Vermont	113	0	113
	New York	2 428	195	2 233
	Michigan	2 420	0	2 420
	Minnesota	3	0	3
Total Ontario		4 964	195	4 769
Manitoba	Minnesota	6 710	480	6 230
	North Dakota	1 115	131	984
Total Manitoba		7 825	611	7 214
Saskatchewan	North Dakota	184	102	82
Alberta	Montana	0	2	-2
British Columbia	Montana	3	0	3
	Washington	1 802	1 081	721
	Oregon	1 081	0	1 081
	California	19	0	19
	Other (e)	2	0	2
Total British Columbia		2 907	1 081	1 826
Total		29 364	2 691	26 673

Notes: a) Sales and purchases only; excludes exchanges.

b) Sales to the United States.

c) Purchases from the United States.

d) Trade with the New England Power Pool - quantities to each state cannot be accurately determined.

e) Includes Nevada and Alaska.

E7. Electricity Trade Between the United States and Canada (a)

(By American Region / State, Gigawatt Hours)

Region/State	Province	Import (b)	Export (c)	Net Import (b) - (c)
New England				
Maine	New Brunswick	1 014	73	941
Massachusetts	New Brunswick	764	0	764
Vermont	Quebec	1 910	427	1 483
	Ontario	113	0	113
New England (d)	Quebec	6 455	144	6 311
Total New England		10 256	644	9 612
New York	Quebec	3 341	56	3 285
	Ontario	2 428	195	2 233
Total New York		5 769	251	5 518
Michigan	Ontario	2 420	0	2 420
Midwest				
Minnesota	Ontario	3	0	3
	Manitoba	6 710	480	6 230
North Dakota	Manitoba	1 115	131	984
	Saskatchewan	184	102	82
Total Midwest		8 012	713	7 299
Western				
Montana	Alberta	0	2	-2
	British Columbia	3	0	3
Washington	British Columbia	1 802	1 081	721
Oregon	British Columbia	1 081	0	1 081
California	British Columbia	19	0	19
Other (e)	British Columbia	2	0	2
Total Western		2 907	1 083	1 824
Total		29 364	2 691	26 673

Notes: a) Sales and purchases only; excludes exchanges.

b) Purchases from Canada.

c) Sales to Canada.

d) Trade with the New England Power Pool - quantities to each state cannot be accurately determined.

e) Includes Nevada and Alaska.

Appendix F

Financial Regulation

F1. Financial Information - Group 1 Oil Pipeline Companies

1993 (a)	Cochin (b)		Interprovincial		IPL(NW)		Trans Mountain		Trans-Northern		Total
	(\$000 000)	(%)	(\$000 000)	(%)	(\$000 000)	(%)	(\$000 000)	(%)	(\$000 000)	(%)	
Revenue Requirement											
Return	13.2	41.8	80.1	24.8	35.5	50.3	20.1	23.7	6.8	21.9	155.7
Depreciation	0.0	0.0	49.0	15.2	14.8	21.0	10.1	11.9	2.3	7.4	76.2
Operating & Mtce.	14.9	47.1	151.3	46.8	8.3	11.7	33.7	39.7	16.2	52.1	224.4
Taxes	3.5	11.1	42.5	13.2	12.0	17.0	20.9	24.7	5.8	18.6	84.7
Total	31.6	100.0	322.9	100.0	70.6	100.0	84.8	100.0	31.1	100.0	541.0

Capitalization of Rate Base (c)

Debt	N/A(d)	N/A	412.6	58.1	164.0	65.6	96.7	52.5	20.6	50.7	693.9
Preferred	N/A(d)	N/A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Common Equity	N/A(d)	100.0	297.8	41.9	86.1	34.4	87.4	47.5	20.0	49.3	491.3
Total	95.3	100.0	710.4	100.0	250.1	100.0	184.1	100.0	40.6	100.0	1 280.5

Return on Common Equity

Approved	N/A(d,e)	N/A	32.7	12.50	13.8	16.00	10.1	11.50	2.4	11.75	
Actual	6.4	6.72	36.5	12.30	13.8	16.00	9.9	11.36	4.6	22.00	
1992	(\$000 000)	(%)	(\$000 000)	(%)	(\$000 000)	(%)	(\$000 000)	(%)	(\$000 000)	(%)	Total

Revenue Requirement

Return	12.1	41.9	78.7	25.0	37.2	51.1	22.2	24.3	5.1	17.6	155.3
Depreciation	0.0	0.0	45.1	14.3	14.8	20.3	9.2	10.0	2.2	7.6	71.3
Operating & Mtce.	14.0	48.4	150.2	47.6	8.7	12.0	31.7	34.6	17.2	59.3	221.8
Taxes	2.8	9.7	41.3	13.1	12.1	16.6	28.5	31.1	4.5	15.5	89.2
Total	28.9	100.0	315.3	100.0	72.8	100.0	91.6	100.0	29.0	100.0	537.6

Capitalization of Rate Base (c)

Debt	N/A (d)	N/A	383.5	59.2	177.3	67.1	89.0	52.5	17.9	44.2	667.7
Preferred	N/A (d)	N/A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Common Equity	N/A (d)	100.0	264.5	40.8	86.9	32.9	80.5	47.5	22.6	55.8	454.5
Total	92.7	100.0	648.0	100.0	264.2	100.0	169.5	100.0	40.5	100.0	1 214.9

Return on Common Equity

Approved	N/A (d,e)	N/A	33.2	12.5	14.0	16.0	10.1	12.5	3.0	13.75	
Actual	5.5	5.95	38.2	14.4	14.0	16.0	12.3	15.9	3.0	13.44	

- a) Data based on preliminary estimates.
- b) Information is based on a semi-depreciated rate base which complies with the Board's direction dated 20 December 1993. For comparison purposes, 1992 has been presented using the same method.
- c) Data excludes construction work in progress.
- d) Not applicable because company is financed by 100% equity on a joint venture basis.
- e) Not applicable as company is regulated on a complaint basis.

F2. Financial Information - Group 1 Gas Pipeline Companies

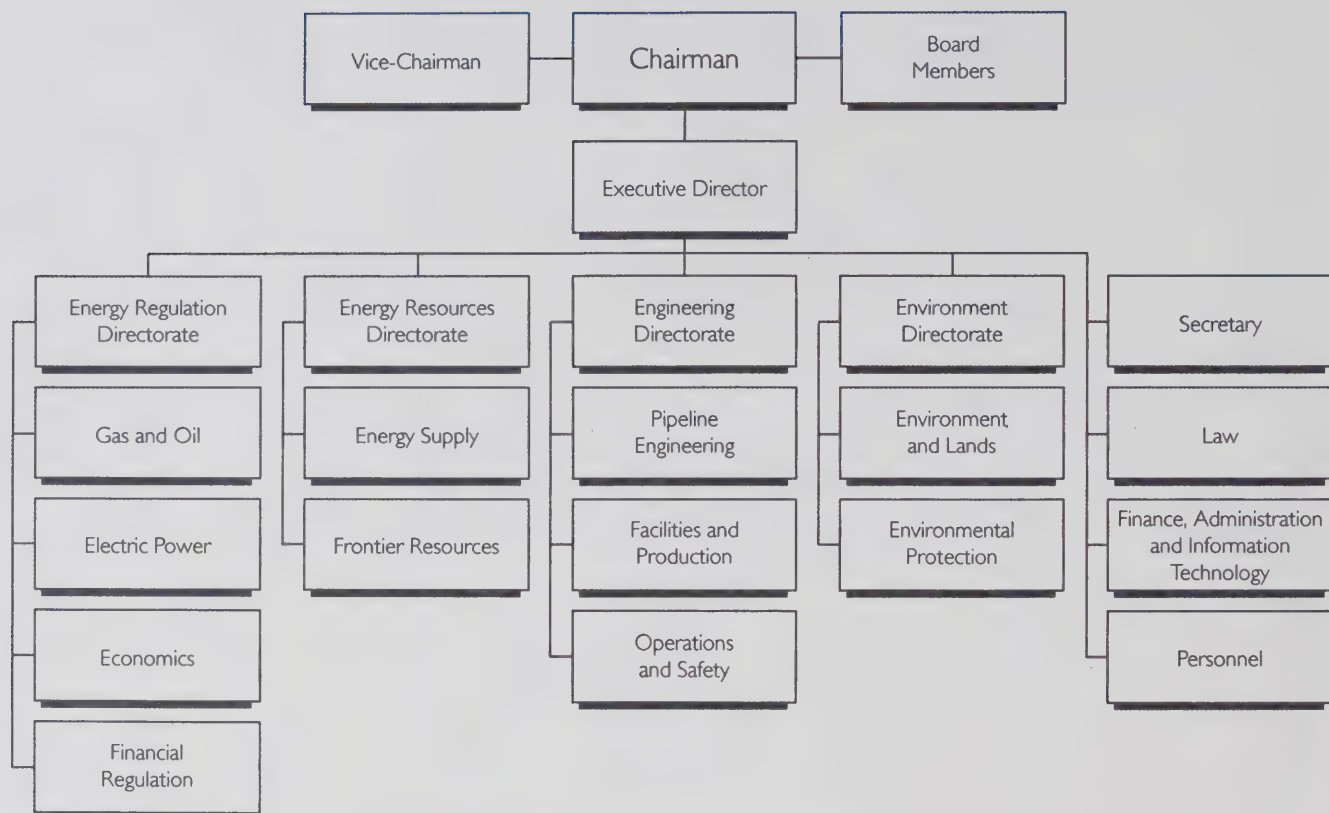
1993 (a)	Alta. Nat. Gas (\$000 000)	(%)	Foothills (\$000 000)	(%)	TQM (\$000 000)	(%)	TransCanada (\$000 000)	(%)	Westcoast (\$000 000)	(%)	Total
Revenue Requirement											
Return	7.5	23.0	54.3	38.9	41.1	56.5	659.0	41.4	131.4	35.0	893.3
Depreciation	2.6	8.0	22.5	16.1	13.2	18.1	195.2	12.3	35.0	9.3	268.5
Operating & Mtce.	19.7	60.6	48.0	34.4	6.6	9.1	594.2	37.3	149.1	39.7	817.6
Taxes	2.7	8.3	14.7	10.5	11.9	16.3	142.7	9.0	60.1	16.0	232.1
Total	32.5	100.0	139.5	100.0	72.8	100.0	1 591.1	100.0	375.6	100.0	2 211.5
Capitalization of Rate Base (b)											
Debt	49.9	68.4	474.4	71.0	240.9	75.0	3637.4	60.6	759.4	62.4	5162.0
Preferred	0.0	0.0	0.0	0.0	0	0.0	562.1	9.4	31.9	2.6	594.0
Common Equity	23.0	31.6	194.0	29.0	80.3	25.0	1799.8	30.0	426.1	35.0	2523.2
Total	72.9	100.0	668.4	100.0	321.2	100.0	5999.3	100.0	1 217.4	100.0	8279.2
Return on Common Equity											
Approved	N/A(c)	N/A	21.4	11.50	9.8	12.25	221.5	12.25	52.8	12.25	
Actual	2.9	12.08	21.4	11.50	10.2	12.66	221.0	12.28	52.4	12.21	
1992	(\$000 000)	(%)	(\$000 000)	(%)	(\$000 000)	(%)	(\$000 000)	(%)	(\$000 000)	(%)	Total
Revenue Requirement											
Return	4.9	19.6	56.3	40.1	44.6	58.1	566.2	37.7	128.4	36.6	800.4
Depreciation	1.7	6.8	20.2	14.4	13.2	17.2	176.9	11.8	39.7	11.3	251.7
Operating and Mtce.	15.5	62.0	47.4	33.8	6.8	8.9	581.9	38.8	124.8	35.5	776.4
Taxes	2.9	11.6	16.5	11.7	12.1	15.8	175.5	11.7	58.3	16.6	265.3
Total	25.0	100.0	140.4	100.0	76.7	100.0	1 500.5	100.0	351.2	100.0	2 093.8
Capitalization of Rate Base (b)											
Debt	32.1	69.5	420.8	70.8	249.5	75.0	2 958.9	59.4	711.6	62.2	4 372.9
Preferred	0.0	0.0	0.0	0.0	0.0	0.0	519.9	10.4	31.8	2.8	551.7
Common Equity	14.1	30.5	173.3	29.2	83.2	25.0	1 502.5	30.2	400.3	35.0	2 173.4
Total	46.2	100.0	594.1	100.0	332.7	100.0	4 981.3	100.0	1 143.7	100.0	7 098.0
Return on Common Equity											
Approved	N/A (c)	N/A	23.3	14.0	11.4	13.75	196.1	13.25	51.9	12.50	
Actual	1.7	12.18	23.3	14.0	12.2	14.62	198.4	13.41	52.6	12.62	

a) Based on preliminary estimates.

b) Excludes construction work in progress.

c) Not applicable as company is regulated on a complaint basis.

ORGANIZATION CHART



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Bruce Young	Chief, Geology and Resources Assessment

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Government
Publications

FOR IMMEDIATE RELEASE

NOVEMBER 2, 1959.

OTTAWA, Ont., November 2, 1959 -- The National Energy Board

Act came into force today by proclamation of the Governor General in Council.

At the same time, Regulations under Part VI of the Act,

NATIONAL ENERGY BOARD

dealing with applications for licenses to export and import gas

and to export power, were passed by the Governor General in

Council. Under the Regulations, all licenses for the exportation

of gas or power or the importation of gas are subject to the

approval of the Governor in Council.

1994 ANNUAL REPORT

The Regulations also provide that propane and butane may be exported by means other than a pipe line, without a license.

The National Energy Board is also issuing its Rules of Practice and Procedure.

With the proclamation of the Act and the establishment of

Regulations and the Rules of Practice and Procedure, applicants

THIRTY-FIFTH YEAR

for certificates of public convenience and necessity and export or

import licenses will be in a position to proceed with the

preparation of applications and to furnish the information that is required.

METRIC CONVERSION TABLE

The National Energy Board uses the International System of Units. The energy units most commonly referred to in this report are the gigajoule and the petajoule. Combustion of a 30-litre gasoline fill-up expends approximately one gigajoule of energy. A petajoule is one million gigajoules. On average, Canada consumes about one petajoule of energy for all uses (heat, light, transportation, etc.) every 50 minutes.

The following conversion table is provided for the convenience of readers who may be more familiar with the Imperial System.

APPROXIMATE CONVERSION FACTOR

metre	=	3.28	feet
kilometre	=	0.62	mile
cubic metre of oil	=	6.3	barrels
cubic metre of natural gas	=	35.3	cubic feet
gigajoule	=	0.95	thousand cubic feet of natural gas at 1000 Btu per cubic foot or 0.165 barrels of oil, or 0.28 megawatt hours of electricity
hectares	=	2.47	acres
gigajoule	=	10^9	joules
petajoule	=	10^{15}	joules
gigawatt hour	=	10^6	kilowatt hour
terawatt hour	=	10^9	kilowatt hour

NOTE: The data and statistics for 1994 are estimates in most cases, since actual values were generally not available at the time of printing this report.

31 March 1995

The Honourable Anne McLellan, P.C., M.P.
Minister of Natural Resources Canada
Ottawa, Ontario

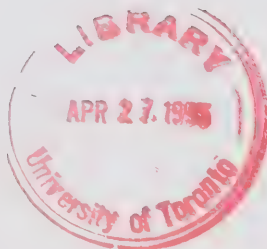
Dear Ms. McLellan:

I am pleased to submit the Annual Report of the National Energy Board for the year ending 31 December 1994, in accordance with the provisions of Section 133 of the National Energy Board Act, R.S.C. 1985, c. N-7.

Yours sincerely,



R. Priddle
Chairman



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* Appendices to the 1994 Annual Report have been published separately. A listing of these appendices can be found on page 33. The appendices can be obtained from the Board in several ways. They can be accessed through the Board's Electronic Bulletin Board System, on diskette or hard copy (see page 33 for instructions for accessing the Bulletin Board System and requesting a diskette or a hard copy).

CHAIRMAN'S LETTER

1994 marked the National Energy Board's 35th Anniversary, the Act having been proclaimed and the first members appointed in November 1959.

Over those years, the Board has become recognized as a sensible and increasingly experienced regulator in key areas of federal jurisdiction and as a source of advice on specialized energy matters to government and the public.

The emphasis of the Board's regulation has changed over time and since 1985 it has been a leader in the implementation of policies which now provide a comprehensive framework for the free functioning of oil and gas markets, nationally and internationally.

The Board seeks to carry out all its activities with careful regard to efficiency and economy. Since deregulation of Canadian energy markets was initiated in 1985, the number of staff involved in its regulation, including frontier activities, has declined from about 550 to 282 at year-end 1994, a reduction of nearly 50 percent.

There is a need to distinguish between deregulation of markets for energy and proper regulation of energy facilities. In the latter area, the Board makes every effort to regulate appropriately in the public interest where considerations of the natural environment, human safety or economic circumstances so require. Thus, in 1994:

- ◆ The Board carried out environmental assessments of more than 160 projects to ensure sound practices are followed. It has been working in interdepartmental and intergovernmental forums to foster cooperation and reduce overlap and duplication. The Board has been assessing the implications of the Canadian Environmental Assessment Act and developing measures to fulfil its obligations relating thereto.
- ◆ As a result of changes to the NEB Act, the Board has improved its ability to take immediate action when the safety of company employees and the public is at risk or when an activity causes detriment to property or the environment. The Board has now designated inspection officers who have the authority to issue orders directly to companies in such instances.
- ◆ With a view to further simplifying the toll regulation of pipelines, the Board held a generic hearing on the cost of capital of major oil and gas pipelines under its jurisdiction. This proceeding should enable the Board to establish the cost of capital for a period of years, thereby eliminating what in some cases have become annual reviews involving essentially-repetitive evidence.

In May 1994, amendments to the *National Energy Board Act*, the *Canadian Oil and Gas Operations Act* and the *Canada Petroleum Resources Act* came into effect with the proclamation of Bill C-6. These legislative changes completed the devolution of the responsibilities of the Canada Oil and Gas Land Administration (COGLA). The legal framework is now in place for the Board, rather than COGLA, to regulate the technical aspects of exploration, for development and production of petroleum resources on Canada's frontier lands in non-accord areas.

Jean-Guy Fredette, who had served as our Vice Chairman for seven years, retired on November 28, 1994 and was replaced in early 1995 by Kenneth W. Vollman, a Member of our Board since 1988.



R. Priddle

THE BOARD'S ROLE, RESPONSIBILITIES AND OPERATIONS

OVERVIEW

The **National Energy Board** (the Board) is an independent federal regulatory tribunal established in 1959. It reports to Parliament through the **Minister of Natural Resources** (formerly **Energy, Mines and Resources**). At year end, the Board had six members on strength, including the Chairman, supported by a staff of 282 employees who provide advice on energy related subjects such as economics, engineering, environment, finance, geology, law, energy market developments and give administrative and regulatory support to the Board.

The Board is a court of record and, with regard to attendance at hearings, the swearing in and examination of witnesses, the production and inspection of documents and the enforcement of its orders, it has all the powers vested in a superior court of record. The Board's regulatory decisions and the reasons for them are issued as public documents.

The Board's regulatory powers under the *National Energy Board Act* (the Act) include the granting of authorizations for:

- ◆ the construction and operation of interprovincial and international oil and gas pipelines, international power lines and designated interprovincial power lines;
- ◆ the setting of tolls and tariffs for oil and gas pipelines under its jurisdiction.
- ◆ the export of oil, natural gas and electricity; and
- ◆ the import of natural gas.

The Board also has regulatory powers under the *Canada Oil and Gas Operations Act* for oil and gas exploration and production activities on Canada's frontier lands not otherwise regulated by joint federal/provincial boards. The Board's mandate includes the provision of expert technical advice to the **Canada-Newfoundland and Canada-Nova Scotia Offshore Petroleum Boards**, **Natural Resources Canada** and the **Department of Indian Affairs and Northern Development**.

One of the Board's responsibilities is to monitor the current and future supply of Canada's major energy commodities, and the domestic and international demand for them. The Board also has specific responsibilities under the *Northern Pipeline Act* and the *Energy Administration Act*. In addition, Board inspectors have been appointed safety officers by the **Minister of Human Resources Development** (formerly **Labour Canada**), to administer Part II of the *Canada Labour Code*.

The Board has an important advisory function and may, on its own initiative, hold inquiries and conduct studies on specific

energy matters and prepare reports for the information of Parliament, the federal government and of the general public. The Act requires that the Board keep under review matters relating to all aspects of energy supply, production, development and trade which fall within the jurisdiction of the federal government. The Board also carries out studies and prepares reports at the request of the **Minister of Natural Resources**.

The Board receives approximately 750 applications annually. These range from straightforward and routine requests for Board orders to major applications for export licences, pipeline toll orders and certificates for the construction of major new facilities and large pipeline facility expansion projects. Those that do not involve an oral hearing are dealt with by internal processes of examination or written public proceedings. The Board continues to take steps to simplify all these processes, while at the same time seeking to maintain their essential fairness, consistency, and openness to general scrutiny.

PIPELINE FACILITIES

Board approval is required before any interprovincial or international pipeline can be built or operated. This includes any additions to pipeline systems already under the Board's jurisdiction. Board approval is given in the form of a Certificate of Public Convenience and Necessity or, for pipelines not exceeding 40 kilometres, including system upgrades and additions, by an Order. Certificates require the approval of the Governor in Council.

Public hearings are held for all proposed pipelines exceeding 40 kilometres in length and may be held for other facilities applications at the Board's discretion. In granting a certificate or an order authorizing the construction of pipeline facilities, the Board must be satisfied that the requested facilities are, and will continue to be, required to satisfy public convenience and necessity. Upon granting approval, the Board monitors pipeline construction and operation to ensure compliance with safety regulations and any specific conditions set by the Board.

The Board currently regulates the natural gas, oil and petroleum products pipelines of 63 companies. The total length of Board regulated pipelines is in excess of 39 000 kilometres (24 200 miles).

During 1994, the Board continued to provide technical and administrative assistance to the **Northern Pipeline Agency**, which pursuant to the *Northern Pipeline Act* has lead responsibility for overseeing the planning and construction of the Canadian portion of the proposed Alaska Natural Gas Transportation System by **Foothills Pipe Lines Ltd.** As well, an arrangement

continued whereby a Board Member served as Administrator and Designated Officer of the Agency (position occupied during 1994 by Roy Illing).

In 1994, the Act was amended to allow the Board to designate inspection officers for the purpose of ensuring the protection of property and the environment. Inspection officers have the authority to issue orders to require companies to take immediate action where the safety of company employees and the public is at risk or that a detriment to property or the environment is being or will be caused by an activity.

During the year, the Board continued its involvement in a Pipeline Task Force with the **Alberta Energy Resources Conservation Board**. The purpose of this task force is to develop consistent and compatible regulatory requirements. It is expected that this process will result in a more efficient use of organizational resources and lead to a reduced regulatory burden on both the pipeline industry and the public.

While the Board has exclusive responsibility for regulating the safety of oil and gas pipelines under federal jurisdiction, it shares the responsibility for the investigation of pipeline accidents with the **Transportation Safety Board**. In 1994, the Board signed a Memorandum of Understanding with the **Transportation Safety Board** which outlines the roles and responsibilities of each body with regard to pipeline accident investigations.

FINANCIAL REGULATION OF PIPELINES

The Board ensures that all tolls and tariffs are just and reasonable and that pipeline services are provided without unjust discrimination. During 1994, the Board rendered decisions on three toll applications, approving an aggregate cost of service of \$2.1 billion compared with an applied-for amount of \$2.2 billion.

For regulatory purposes, pipelines are segregated into two groups: five gas and five oil pipeline companies with extensive systems are in Group 1; and those with less elaborate systems are in Group 2.

The financial and operating performances of Group 1 companies are closely monitored by the Board. Within this group, the Board has reduced the financial regulation of three companies to the degree that their tolls and tariffs are generally reviewed only on a complaints basis. Tolls of the Group 2 companies are normally reviewed only upon receipt of a complaint. Otherwise the monitoring of these companies consists primarily of reviewing their financial performance.

The Board conducts compliance audits of pipeline companies as part of its monitoring responsibility, which includes examination of issues raised in recent toll proceedings, such as efficiency and cost allocation.

NATURAL GAS, OIL AND ELECTRICITY EXPORTS

The Board authorizes the export and import of natural gas and the export of oil through the issuance of long-term licences and short-term orders. All exports of oil are currently made under short-term orders. In considering an export application for a long-term licence to export natural gas or oil, the Board takes into account section 118 of the Act. This requires that the Board satisfy itself that the quantity of gas or oil to be exported does not exceed the surplus remaining after due allowance has been made for the reasonably foreseeable requirements for use in Canada. Licences require the approval of the Governor in Council.

The Board may authorize the construction of international power lines and electricity exports by issuing permits, certificates or licences. Exports and international power lines are normally authorized by the issuance of a permit, without a public hearing, unless the Governor in Council, upon the recommendation of the Board, designates a proposed export or an international power line for licensing or certificating procedures which involve a public hearing. No such public hearings were held during 1994.

The Board monitors exports of energy and receives monthly data from exporters on volumes and prices. Consolidated reports are made available to government, industry and the general public. Data on exports of energy during 1994 are provided in Appendices, separate from this report, which can be obtained in several ways as outlined on page 33.

ENVIRONMENTAL MATTERS

The Board is responsible for environmental issues relating to the regulation of gas, oil and petroleum products pipelines, energy exports, international power lines, and frontier oil and gas activities.

The Board conducts an environmental surveillance program to ensure that regulated companies protect the environment during the construction of their facilities and that they restore any lands which are disturbed. The Board verifies compliance with each company's own corporate environmental protection procedures and with the Board's own requirements. In addition, the Board responds to landowner complaints relating to land rights matters and to environmental concerns arising as a result of construction or operation of pipeline facilities.

Proponents of federally-regulated energy projects are usually required to propose a socio-economic action plan, including a monitoring system, to deal effectively with impacts. The Board may set socio-economic terms and conditions as part of any approval it grants.

Changes to the Board's environmental assessment process will be necessary when the *Canadian Environmental Assessment Act* comes into force in January 1995. New components of the assessment process will include the requirement, in some cases, for comprehensive study and mediation, to maintain an ongoing public registry of all documents relevant to the assessment of a project, and to consider the need for follow-up programs.

The Board is responsible for emergency response under the *Canada Oil and Gas Operations Act*. These responsibilities include taking such actions as it may deem necessary on frontier lands to: repair or remedy any condition resulting from a spill; reduce or mitigate any danger to life, health or environment resulting from a spill; and, where necessary, assume management and control of operations giving rise to waste, or where a spill or the generation of debris has occurred.

OIL AND GAS RESERVES

The Board evaluates and reports on all oil and gas resources and reserves in Canada, based on internal studies and data collected from other government agencies. The Board and the **Alberta Energy Resources Conservation Board** signed an agreement in 1994 on the implementation of a common reserves data base for oil and gas reserves situated in that province. Both Boards are committed to jointly developing more efficient methods for maintaining estimates of reserves and exploring other opportunities for increasing efficiency.

FRONTIER OIL AND GAS

The Board has regulatory responsibility for oil and gas exploration, development and production activities on Canada's frontier lands, excluding those areas offshore of Newfoundland and Labrador, and Nova Scotia which are subject to separate federal/provincial accords. The Board regulates these activities to enhance worker safety, to protect the environment and to conserve oil and gas resources. This responsibility was assigned through amendments to the *National Energy Board Act*, the *Canada Oil and Gas Operations Act* and the *Canada Petroleum Resources Act*.

A new Memorandum of Understanding between **Human Resources Development Canada** and the Board was executed in 1994 to coordinate the safety functions under the *Canada Oil and Gas Operations Act* and the *National Energy Board Act*. This Memorandum of Understanding applies not only to works in the frontier areas, but also to all Board regulated pipelines and associated facilities.

The federal government has reached agreement with the Yukon government for the devolution of oil and gas responsibilities to the territorial government. The Board continues to work closely

with Yukon officials to facilitate the transfer of oil and gas regulatory responsibilities in accordance with the *Yukon Accord Implementation Agreement*.

PUBLIC CONSULTATION

In consultation with government agencies, industry and the general public, the Board pursued several initiatives during the year to simplify and improve its regulatory processes and increase its cooperation with other regulatory agencies. More information on these initiatives may be found commencing on page 20 in the *Studies and Reports* section and starting on page 26 in the *Legal Actions, Regulations and Guidelines* section.

THE BOARD'S OPERATIONS

The Board has been implementing measures towards expenditure reduction in the discharge of its duties. The total budget decreased from \$33.6 million in the 1992/1993 fiscal year, to \$32.0 million in 1993/1994 with a projected reduction to \$30.9 for 1994/1995. As part of these reductions, the Board closed its regional office in Yellowknife in 1994.

In real terms, adjusted by the consumer price index, the Board's expenditures have decreased by about 14 percent since 1985-86 notwithstanding the transfer to it in 1991 of certain of the **Canada Oil and Gas Lands Administration's** responsibilities.

In February, the Board restructured its management eliminating a layer at the director general level and reducing the number of branch directors from seventeen to ten. The changes were made possible, in part, by combining some functional areas. Realignment of some positions within the branches has also taken place.

In 1991, the Board implemented the federal government's "Cost Recovery Plan", and since then has been recovering approximately 85 percent of its costs from industry.

ELECTRONIC REGULATORY FILING

In 1993, at the request of some interested parties, the Board undertook a feasibility study of a project called Electronic Regulatory Filing (ERF). The goal of ERF is to create an environment for the electronic exchange and use of regulatory documents and other relevant documents and data. Cost benefit analyses have indicated that the project should lead to significant net savings both for the Board and outside parties. The initiative will improve the quality of the regulatory process by improving work procedures, reducing costs and incorporating flexibility and efficiency. The implementation of ERF is estimated to cost about \$7 million and will span a period of three to four years.

During the year the Board tested a prototype for ERF known as the Conference Room Pilot to demonstrate the concepts and tools of ERF, and in particular how this technology could facilitate the processing of applications within the Board.

A standards committee has been struck to commence the process of defining specific document types, appropriate standards, and formats to be used in the ERF implementation. The committee is made up of representatives from the Board, the companies it regulates and other interested persons.

BOARD DOCUMENT SYSTEM

As part of its Electronic Regulatory Filing initiative, the Board has developed an electronic service for hearing preparation and research. The Board Document System is an electronic database that provides dial-in access to Reasons for Decision and hearing transcripts. These documents can be viewed, searched and retrieved on-line, from remote locations or at the Board's Calgary Office. The Board tested the provision of public access to this electronic data base in October, November and December with the participants of the Multi-Pipeline Cost of Capital hearing (RH-2-94). Development of the system will continue with plans to make full public access available in 1995.

ELECTRONIC BULLETIN BOARD

In September, the Board launched an electronic Bulletin Board System to make certain key documents available to the public. The system provides instant access worldwide to information through ordinary computer-modem hookups. Documents available on the system include: news releases, *Regulatory Agenda*, hearing orders and statistical reports.

TABLE 1
Financial Summary

(fiscal year – 1 April - 31 March)

	Person-Years		Budget	
	Authorized	Utilization	Appropriation	Expenditure
(000\$)				
National Energy Board Only				
1985-86	446	424	27 325	25 055
1986-87	449	415	26 774	25 565
1987-88	433	392	26 966	25 618
1988-89	358	331	24 501	22 572
1989-90	347	317	24 484	23 581
1990-91	347	321	25 760	23 629
National Energy Board Including Frontier Activities^(a)				
1991-92 ^(a)	397	343	39 674	37 082
1992-93	396	323	33 570	27 447
1993-94	N/A ^(b)	323	32 031	28 439
1994-95	N/A ^(b)	320 ^(c)	30 866	27 500

(a) Effective April 1991, 54 employees and \$6 million from the former Canada Oil and Gas Lands Administration were transferred to the Board. The Board relocated to Calgary in September of the same year.

(b) Treasury Board has implemented "Operating Budget" control. Authorization of person-years is no longer used.

(c) The utilization of 320 person years is an average for the year that includes provision for students, overtime, and staff on work force adjustment. At year end, 282 people were employed at the Board.

ENERGY OVERVIEW

ENERGY PRODUCTION, CONSUMPTION AND TRADE

The Canadian energy sector plays an important role in the Canadian economy. In 1994, the Canadian energy sector represented about seven percent (approximately \$45 billion) of total Canadian Gross Domestic Product; energy exports accounted for about nine percent (approximately \$20 billion) of total Canadian exports.

The Canadian energy industry experienced strong growth in 1994 with energy production increasing by 6.1 percent (Table 2). The production of all major fuels increased. Domestic energy consumption rose 4.5 percent following the growth in demand for all major fuels. Total energy exports and imports are estimated to have risen by 6.9 and 0.2 percent, respectively.

TABLE 2
Canadian Energy Supply and Disposition^(a)
(petajoules)

	1993 ^(c)	1994 ^(c)	Percent Change
Production ^(b)	14 220	15 094	6.1
Imports	1 959	1 963	0.2
Total Supply	16 179	17 057	5.4
Domestic Use	9 983	10 433	4.5
Exports	6 196	6 624	6.9
Total Disposition	16 179	17 057	5.4

(a) Includes petroleum, natural gas, coal, hydro, nuclear, renewables and others

(b) Includes inventory change and other adjustments

(c) Estimate

TABLE 3
Canadian Energy Consumption by Sources – Market Shares
(percent)

	1990	1991	1992	1993 ^(a)	1994 ^(a)
Petroleum	36.6	34.6	35.0	36.2	35.1
Natural Gas	25.8	25.8	26.3	26.2	26.0
Hydroelectricity	11.4	11.8	11.9	11.5	11.5
Nuclear	9.1	10.6	9.8	10.9	12.5
Coal	11.4	11.4	11.4	10.0	9.8
Renewables and Others	5.6	5.7	5.4	5.2	5.1
Total – Petajoules	9 275	9 322	9 480	9 983	10 433

(a) Estimate

In recent years, the market shares of the various energy forms, expressed as a percentage of total domestic energy consumption, have changed moderately (Table 3). In 1990, petroleum accounted for 36.6 percent of total domestic energy consumption, however, by 1994 petroleum's share had declined to 35.1 percent. The share of natural gas increased from 25.8 percent in 1990 to 26.0 percent in 1994. Between 1990 and 1994, the share of hydroelectricity and nuclear power increased by 0.1 and 3.4 percentage points, respectively, while coal and renewables declined by 1.6 and 0.5 percentage points, respectively.

The value of gross exports of petroleum, natural gas and electricity has increased from an estimated \$15.4 billion in 1993, to about \$17.0 billion in 1994. The value of net exports increased from \$8.9 billion in 1993 to about \$10.3 billion in 1994 (Table 4).

EXPLORATION AND DEVELOPMENT ACTIVITY

Exploration and development activity statistics and expenditures for the past five years are illustrated in Figures 1 through 4.

During 1994, activity in land sales, drilling and geophysical activity attained the highest levels since 1985. Activity levels in both oil and gas increased despite lower oil prices in the first quarter and decreasing gas prices during the last quarter of the year.

TABLE 4
Canadian Trade in Petroleum, Natural Gas and Electricity

	1993		1994 ^(c)	
	Petajoules	Billion\$	Petajoules	Billion\$
Exports				
Petroleum ^(a)	2 781	8.6	2 878	9.4
Natural Gas	2 383	5.9	2 682	6.3
Electricity ^(b)	106	0.9	161	1.3
Gross Exports	5 270	15.4	5 721	17.0
Imports				
Petroleum ^(a)	1 660	6.3	1 476	6.6
Natural Gas	38	0.1	45	0.1
Electricity ^(b)	9	0.1	3	<0.1
Gross Imports	1 707	6.5	1 524	6.7
Net Exports	3 563	8.9	4 197	10.3

(a) Includes petroleum products and natural gas liquids

(b) Electricity is converted at 3.6 petajoules per terawatt hour

(c) Estimate

Canadian oil and gas industry spending on sales of provincial and federal exploration rights totalled \$1.4 billion, compared with \$732 million in 1993. This represents the highest total since 1980. Governments leased the mineral rights to seven million hectares (17.3 million acres) during 1994, compared with four million hectares (10.1 million acres) in 1993. The average price per hectare in 1994 was \$209 (\$85 per acre), up from \$178 (\$72) in 1993.

In the frontier regions, the awarding of exploration licences is done on the basis of competitive bids which are related to anticipated expenditures. In the Northwest Territories, exploration bids totalling \$22.7 million were offered for 149 817 hectares (370 048 acres) in eight parcels in the Fort Liard region of the southern Northwest Territories, the first new licences on northern lands since 1991. In the Nova Scotia offshore, one exploration licence comprising 55 500 hectares (137 085 acres) was issued in the Sable Island area based on a bid of \$1 million, down from 1993 bids which totalled \$8.2 million on 268 000 hectares (662 000 acres). No exploration commitments were registered in the Newfoundland offshore during 1994.

The average number of active drilling rigs per week in Canada increased from 250 in 1993 to 333 in 1994, and the rig utilization rate jumped from 57 percent to 74 percent. A total of 11 871 completions were recorded in 1994, an increase of 26 percent over the 1993 total of 9 398 wells drilled. Approximately 45 percent of the wells drilled in 1994 were completed as gas wells, 32 percent were completed as oil wells, and 21 percent were dry holes.

Geophysical activity during 1994 was higher than the 1993 level in every month, measured by the number of active crews. The average number of active crews per month increased from 37 in 1993 to 52 in 1994. Western Canada, notably Alberta, experienced strong growth in geophysical activity; on the east coast activity was limited to one crew.

Exploration and development expenditures in Canada in conventional areas during 1994 are estimated at \$9.3 billion compared with \$8.4 billion spent in 1993.

OIL

INTERNATIONAL MARKETS The prices of West Texas Intermediate (WTI) crude oil at Cushing, Oklahoma and North Sea Brent began 1994 at much lower levels than their respective averages in 1993. Prices fell slightly in the early months of 1994, with March WTI and Brent prices falling to \$US 14.64 and \$US 13.81 per barrel, respectively. By July, due in part, to: a stronger than expected summer driving season in the U.S.; maintenance work in the North Sea; and a petroleum workers' strike in Nigeria, prices had increased by more than \$US 4 per barrel.

FIGURE 1
Sales of Exploration Rights
(million hectares leased)

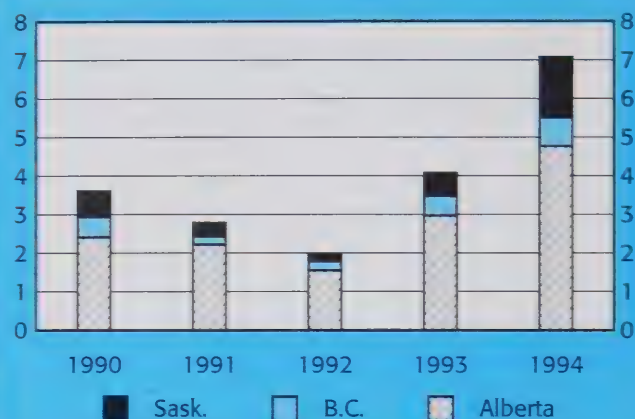


FIGURE 2
Canadian Wells Drilled

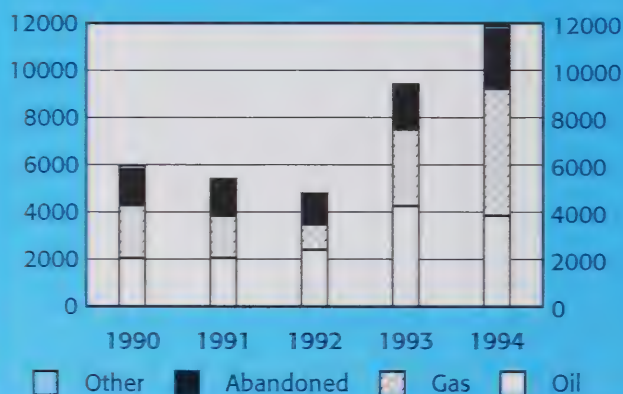
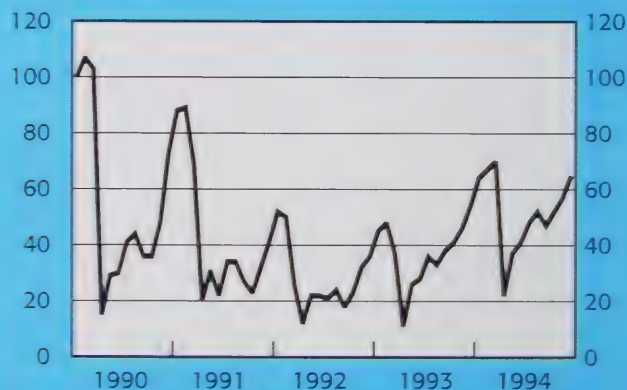


FIGURE 3
Geophysical Activity
(active crews per month)



However, a continuation of the Organization of Petroleum Exporting Countries' (OPEC) production quotas at the existing level and increasing North Sea production resulted in price declines in the latter half of the year. By December, both WTI at \$US 17.16 and Brent at \$US 15.95, had lost about half of their mid-year increase. For the year, prices for WTI and Brent averaged \$US 17.16 and \$US 15.83 per barrel, respectively. This represents a decline of seven percent from 1993 levels for both crudes.

Total world oil production in 1994 is estimated to be about 10.5 million cubic metres (66.1 million barrels) a day. General satisfaction of OPEC members with the continued maintenance of the organisation's aggregate production quota throughout 1994, at 3.9 million cubic metres (24.5 million barrels) per day, resulted in only a small amount of overproduction relative to the

quota. OPEC production for the year averaged 4.0 million cubic metres (25.0 million barrels) per day, only a small increase of 47 700 cubic metres (300 000 barrels) per day over the 1993 average. Production from non-OPEC sources in 1994 rose 111 200 cubic metres (700 000 barrels) per day over 1993 volumes to reach 6.6 million cubic metres (41.2 million barrels) per day. Of these sources, North Sea production reached record levels by the end of the year, resulting in an annual average of 858 500 cubic metres (5.4 million barrels) per day for 1994, the highest ever recorded and a marked increase over the previous record of 731 300 cubic metres (4.6 million barrels) per day set in 1993. Oil production in the former Soviet Union continued to decline, falling to 1.1 million cubic metres (7.2 million barrels) per day in 1994 down from 1.2 million cubic metres (7.8 million barrels) per day in 1993. However, this did mark the slowest rate of decline since output began falling in 1990.

World oil demand in 1994 is estimated to have been 10.8 million cubic metres (68.2 million barrels) per day, an increase of 174 900 cubic metres (1.1 million barrels) per day over 1993 levels (the difference between total world supply and total world demand is accounted for by consumption of natural gas liquids). Economic recovery in both North America and Western Europe generated increased demand by these regions of more than 95 400 cubic metres (600 000 barrels) per day, while continued strong economic growth in Far East Asian countries increased their demand by 95 400 cubic metres (600 000 barrels) per day as well. A significant development in the Asian region in 1994 was that China became a net importer of oil for the first time.

CANADIAN OIL RESERVES The Board's estimate of Canada's remaining established reserves of conventional crude oil, as of 31 December 1993, is 688.8 million cubic metres (4.3 billion barrels). This represents an increase of about 1.3 percent, or 8.9 million cubic metres (55 million barrels) from the reserves remaining at year-end 1992. Additions to established reserves, comprised of new discoveries, extensions to existing pools and revisions to estimates of reserves in existing pools, replaced 111 percent of conventional crude oil production in 1993. Additions to established reserves related to horizontal drilling contributed significantly to total additions in 1993.

Total remaining established reserves of bitumen, as of 31 December 1993, were 457.6 million cubic metres (2.9 billion barrels), compared with the year-end 1992 estimate of 482.2 million cubic metres (3.0 billion barrels) (Table 5).

Table 6 illustrates the trend of additions to established reserves relative to production of conventional crude oil over the five year period 1989 to 1993. On a cumulative basis, additions have replaced 106 percent of production during this period of time.

FIGURE 4
Exploration and Development Expenditures
(billion dollars)

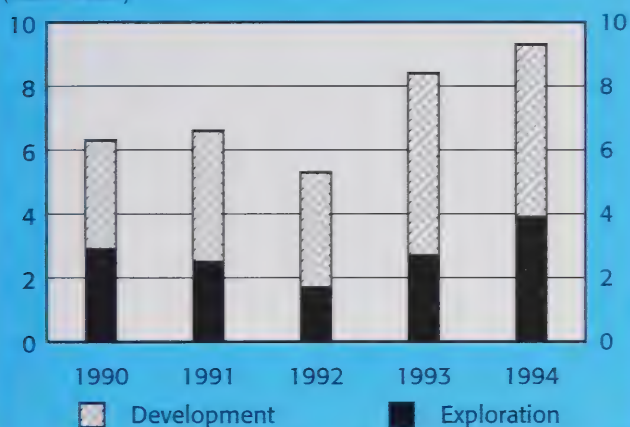
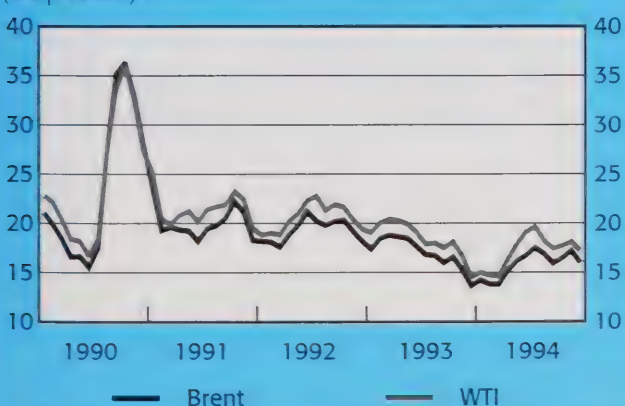


FIGURE 5
Average Price of West Texas Intermediate and North Sea Brent
(US\$ per Barrel)



CRUDE OIL AND PETROLEUM PRODUCTS

CANADIAN CRUDE OIL AND EQUIVALENT PRODUCTION

Canadian production of crude oil and equivalent averaged 302 300 cubic metres (1.9 million barrels) per day in 1994, an increase of 4.7 percent over the 1993 level. Horizontal drilling and reactivation of suspended wells were the main contributors to the increase in productive capacity in the Western Canada Sedimentary Basin. Supply from eastern Canada increased due to a full year of production from the Cohasset-Panuke project, offshore of Nova Scotia (Table 7).

The production of conventional light crude oil amounted to about 148 700 cubic metres (936 800 barrels) per day in 1994, approximately 3.3 percent higher than the 1993 level. Synthetic crude oil production from the Syncrude Canada Ltd. and the Suncor Inc. integrated mining plants in northeast Alberta averaged 41 800 cubic metres (263 300 barrels) per day in 1994, about 8.3 percent higher than in 1993. The increase is attributed to improvements in efficiencies at both plants. The production of heavy crude oil and bitumen averaged 87 300 cubic metres (550 000 barrels) per day in 1994, an increase of approximately 6.1 percent over the 1993 levels. Pentanes plus production averaged 24 500 cubic metres (154 350 barrels) per day, an increase of 3.4 percent above the 1993 rate, mainly due to higher natural gas production in 1994.

CRUDE OIL IMPORTS In 1994, crude oil imports were up five percent to 98 600 cubic metres (621 200 barrels) per day and represented, as in 1993, 40 percent of total refinery feedstock requirements in Canada. On a regional basis, the Atlantic region imported almost 96 percent of its crude oil requirements. As in 1993, Quebec imported approximately 97 percent of its crude oil. Ontario continued to import a small quantity of crude oil, primarily from the U.S. and the North Sea. The other regions in Canada did not import during 1994.

North Sea crude amounted to 52 percent of total crude oil imports, up from 49 percent in 1993. Crude oil originating from OPEC countries represented 42 percent of total imports in 1994, up from 40 percent in 1993. Crude oil imports from other sources accounted for six percent, down from 11 percent in 1993.

CRUDE OIL EXPORTS Total crude oil exports, including pentanes plus and synthetic crude, were 157 100 cubic metres (989 700 barrels) per day, up seven percent from 1993. The 1994 total comprised about 88 000 cubic metres (554 400 barrels) per day of light crude oil and equivalent and approximately 69 100 cubic metres (435 300 barrels) per day of blended heavy crude oil.

The estimated value of crude oil exports in 1994 was \$6.9 billion, compared with \$6.2 billion in 1993. Higher revenues were a

TABLE 5
Estimated Established Canadian Reserves of Crude Oil and Bitumen at 31 December 1993
(million cubic metres)

Conventional Crude Oil	Initial	Remaining
British Columbia	96.7	17.9
Alberta	2 318.6	413.5
Saskatchewan	552.0	128.7
Manitoba	36.7	7.2
Ontario	12.4	1.5
Northwest Territories & Yukon ^(a)		
Mackenzie Delta and Beaufort Sea	0.0	0.0
Arctic Islands and Eastern Arctic Offshore	1.0	0.7
Mainland Territories	37.5	18.0
Nova Scotia ^(b)	4.9	3.3
Newfoundland ^(c)	98.0	98.0
Total Conventional Crude Oil	3 157.8	688.8
Crude Bitumen^(d)		
Surface-mineable	644.0	417.0
In situ	107.1	40.6
Total Crude Bitumen	751.1	457.6
Total (Conventional Oil & Bitumen)	3 908.9	1 146.4

(a) The reserves for the Arctic Islands and Eastern Arctic Offshore region represent only the Bent Horn field. The reserves for the Mainland Territories region correspond to the Norman Wells field.

(b) The reserves for Nova Scotia correspond to the Cohasset and Panuke fields.

(c) The reserves for Newfoundland correspond to the Hibernia field.

(d) Source: Alberta Energy Resources Conservation Board, Report ST94-18 (based on developed projects only)

TABLE 6
Canadian Conventional Crude Oil Reserves Additions and Production
(million cubic metres)

	Additions	Production
1989	109	70
1990	52	70
1991	59	71
1992	76	72
1993	83	75
Total	379	358

result of increased volumes, strength in heavy crude oil prices and the lower value of the Canadian dollar relative to the U.S. dollar.

The U.S. Midwest continued to be Canada's most important market followed by the Montana market. Smaller volumes were shipped from Vancouver to the U.S. West Coast and Gulf Coast. The largest export buyers of light Canadian crude oil in 1994 were, in order of rank, Ashland Oil Inc., Sun Company Inc.,

TABLE 7
Canadian Production of Crude Oil and Equivalent
(thousand cubic metres per day)

Light Crude Oil and Equivalent	1993	1994^(a)
Western Canada		
Conventional Light Crude Oil	140.3	144.2
Synthetic Crude Oil	38.6	41.8
Pentanes Plus	23.7	24.5
Eastern Canada	3.6	4.5
Total Light	206.2	215.0
Conventional Heavy Crude Oil	61.5	65.9
Bitumen	20.9	21.4
Total Heavy	82.4	87.3
Total Crude Oil	288.6	302.3

(a) Estimate

TABLE 8
Canadian Crude Oil and Equivalent Supply and Disposition
(thousand cubic metres per day)

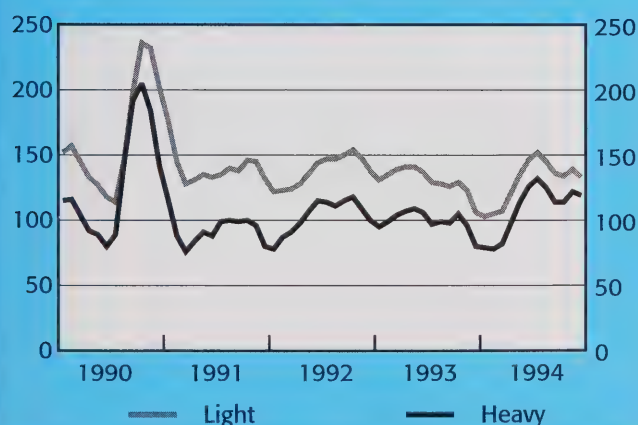
	1993	1994^(c)	Percent change
Production	288.6	302.3	4.7
Imports ^(a)	94.2	98.6	4.7
Total Supply^(b)	382.8	400.9	4.7
Domestic use ^(a)	236.4	245.5	3.8
Exports	146.7	157.1	7.1
Total Disposition^(b)	383.1	402.6	5.1

(a) Source: Statistics Canada, Catalogue 45-004 Monthly

(b) The difference between total supply and total disposition is due to inventory changes and other adjustments

(c) Estimate

FIGURE 6
Light and Heavy Crude Oil Export Prices



Amoco Oil Co., Clark Oil and Refining Company, Koch Refining Company, Shell Oil Company and Mobil Oil Corporation. For heavy Canadian crude oil, the largest foreign buyers were Koch, Mobil and Amoco.

OIL REFINING In 1994, the demand for main petroleum products in Canada averaged 226 600 cubic metres (1 427 600 barrels) per day, an increase of two percent from the 1993 level of 221 400 cubic metres (1 394 800 barrels) per day. Refinery production increased by three percent and imports of main petroleum products decreased by nine percent. Exports of main petroleum products decreased by 11 percent.

Refinery receipts of domestic crude oil averaged 147 000 cubic metres (926 100 barrels) per day, a three percent increase from 1993.

MAIN PETROLEUM PRODUCT IMPORTS Imports of main petroleum products in 1994 averaged 20 000 cubic metres (126 000 barrels) per day, a decrease of nine percent from the previous year. Imports of motor gasoline and middle distillates increased, while receipts of heavy fuel oil decreased significantly.

MAIN PETROLEUM PRODUCT EXPORTS In 1994, exports of main petroleum products and partially processed oil decreased by 11 percent to 30 800 cubic metres (194 000 barrels) per day, compared to the 1993 level of 34 500 cubic metres (217 400 barrels) per day. This reflects a decline in shipments of aviation fuel, middle distillates and partially processed oil.

The estimated revenue of main petroleum product exports, including partially processed oil, was \$1.7 billion in 1994, up from \$1.6 billion in 1993. This revenue excludes product exports from crude oil processing agreements for which prices are not assigned.

The U.S. continued to be Canada's largest buyer of petroleum products, receiving almost 97 percent of total exports. Exports were also made to the Far East and Europe. In the U.S., the East Coast continues to be the largest recipient of petroleum products refined in Canada, followed by the Midwest. The largest exporters of main petroleum products were, in rank order, Irving Oil Limited, Newfoundland Processing Limited, Imperial Oil, Statoil North America Inc. and Ultramar Canada Inc.

OIL PIPELINE CAPACITY During 1994, the Edmonton-Sarnia portion of Interprovincial Pipe Line Inc.'s system operated at capacity. The volumes nominated on the system exceeded capacity throughout 1994, resulting in monthly apportionment ranging from a low of 18 percent in April to a high of 55 percent in November and December. Pursuant to a certificate issued by the Board in December 1993, Interprovincial expanded its system by 27 100 cubic metres (170 000 barrels) per day. A portion of this new capacity became available in late 1994 with the remainder in January 1995.

FIGURE 7
Canadian Crude Oil and Equivalent
Supply and Disposition 1994
 (thousand cubic metres per day)



- (a) Norman Wells
- (b) Bent Horn
- (c) Cohasset, Panuke
- (d) Western Canadian Production via Panama Canal

Domestic crude oil refined in Canada	147.0
Domestic crude oil exported from Canada	157.1
Imported crude oil refined in Canada	98.6
of which:	
North Sea	50.8
Western Hemisphere	12.5
Middle East	18.4
Other	16.9

TABLE 9
Canadian Petroleum Product Exports, 1994^(a)
(thousand cubic metres)

	Motor Gasoline	Middle Distillates	Aviation Turbine Fuel	Heavy Fuel Oil	Partially Processed Oil	Total ^(b)
Atlantic	3 552.5	3 801.8	14.8	436.5	522.9	8 328.5
Quebec	32.7	348.7	0.0	423.6	0.0	805.0
Ontario	144.5	455.1	0.0	415.3	0.0	1 014.8
Prairies	143.4	344.8	55.2	44.1	0.0	587.5
British Columbia	139.6	295.2	3.1	27.2	32.2	497.4
Total	4 012.7	5 245.6	73.1	1 346.7	555.1	11 233.2

(a) Estimate

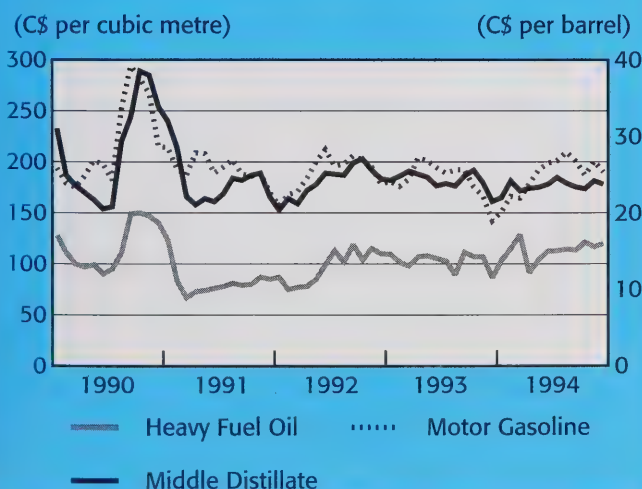
(b) Excludes propane, butanes, lubricants, greases and asphalt.

TABLE 10
Estimated Established Canadian Reserves of Marketable Natural Gas at 31 December 1993
(billion cubic metres)

	Initial	Remaining
British Columbia	507	241
Alberta	3 482	1 541
Saskatchewan	158	80
Ontario	41	9
Northwest Territories & South Yukon Territory	15	5
Total	4 203	1 876

Note: Numbers have been rounded.

FIGURE 8
Main Petroleum Products Average F.O.B. Export Price



Throughput increased in 1994 on Trans Mountain Pipe Line Company Ltd.'s system, resulting in the pipeline operating at capacity for eight months of the year. As a result of increased demand for Trans Mountain's system, the Board, in April 1994, approved an application to increase its capacity by 6 000 cubic metres (37 700 barrels) per day. This additional capacity will be available in January 1995.

NATURAL GAS

CANADIAN NATURAL GAS RESERVES The Board's estimate of remaining established reserves of marketable natural gas in Canada as of 31 December 1993 is 1 876 billion cubic metres (66.2 trillion cubic feet), a decrease of 35 billion cubic metres (1.2 trillion cubic feet) or 1.8 percent from the 1992 year-end reserves estimate. This decrease in remaining established reserves occurred because production exceeded reserves additions in 1993. However, due to the high level of drilling throughout 1994, it is expected that reserves additions will exceed production in 1994. From 1989 to 1993, cumulative reserves additions have replaced 113 percent of gas production. The ratio of total connected and unconnected remaining reserves to production (RR/P) continued its historical decline to a level of about 15 in 1993. The RR/P for the connected reserves was about 10 in 1993.

CANADIAN SUPPLY AND DEMAND Marketable natural gas production in Canada for 1994 is estimated to have been 138.8 billion cubic metres (4.8 trillion cubic feet), an increase of 9.6 percent over 1993. Imports of natural gas totalled 1.2 billion cubic metres (42.4 billion cubic feet), an increase of 20 percent from 1993. Domestic demand for natural gas is estimated to have been 66.8 billion cubic metres (2.4 trillion cubic feet), an increase of 1.2 percent from 1993.

TABLE 11
Canadian Marketable Natural Gas Reserves Additions and Production (Conventional Areas)
(billion cubic metres)

	Additions	Production ^(a)
1989	194	101
1990	136	102
1991	116	104
1992	67	114
1993	107	126
Total	620	547

(a) Production figures in this table are volumes measured in the year in question. In many reserves documents annual production figures are estimated using differences in cumulative production. These two estimates may be different because corrections to cumulative production are only applied to the current year's figure even though in some cases they should also be applied to cumulative production figures for previous years.

FIGURE 9
Canadian Natural Gas Supply and Disposition 1994



Domestic gas delivered in Canada 66.8
 Domestic gas exported from Canada 70.8
 Gas Imports 1.2

Major Export Points

H Huntingdon
 K Kingsgate
 M Monchy
 E Emerson
 N Niagara Falls
 I Iroquois
 P Philipsburg

NATURAL GAS EXPORTS Natural gas exports to the U.S. increased by about 13 percent in 1994, to 70.8 billion cubic metres (2.5 trillion cubic feet) from 62.9 billion cubic metres (2.2 trillion cubic feet) in 1993. Total natural gas export revenues increased by about seven percent, to \$6.3 billion from \$5.9 billion in 1993.

Natural gas exports to the U.S. were regionally distributed as follows: 40 percent to the Central Region; 23 percent to the Northeast; 22 percent to California; 14 percent to the Pacific Northwest; and, one percent to the Mountain Region. The largest exporters of natural gas were, in order of rank, Western Gas Marketing Limited/TransCanada PipeLines Limited, Pan-Alberta Gas Ltd., Pacific Gas and Electric Company, ProGas Limited and CanWest Gas Supply Inc.

FIGURE 10
Natural Gas Average Export Prices
(C\$ per gigajoule)

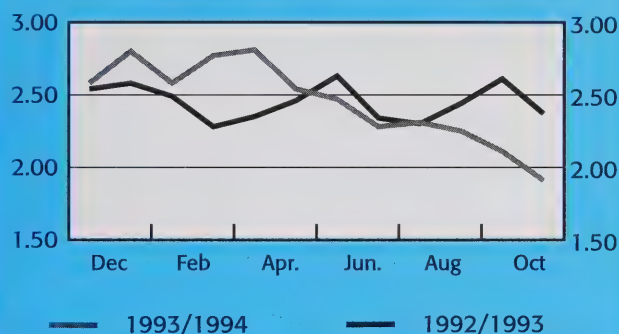
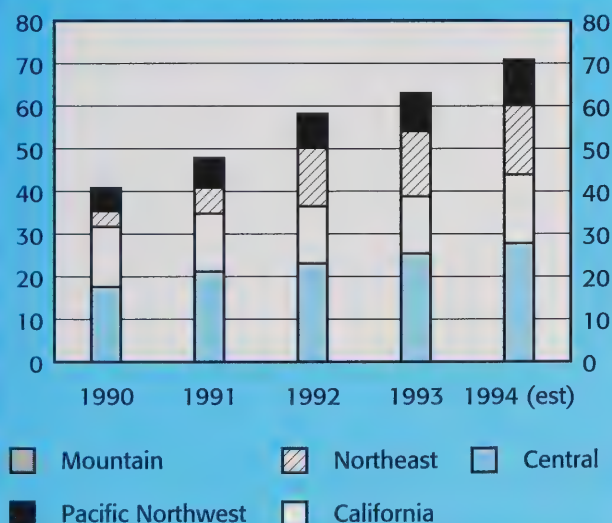


FIGURE 11
Natural Gas Average Exports by Region
(billion cubic metres)



California accounted for much of the increase in export volumes, as a result of increased pipeline capacity to that region. In 1994, the Canadian share of the U.S. natural gas market was 12 percent of consumption.

Sales of Canadian natural gas exported under short-term orders, which apply for a period of up to two years, increased to 35.4 billion cubic metres (1 250 billion cubic feet) in 1994 from 23.4 billion cubic metres (826 billion cubic feet) in 1993. Sales under short-term orders accounted for 50 percent of total natural gas exports in 1994, compared with 37 percent in 1993.

The balance of natural gas exports occurred under long-term licences, which may have a term of up to 25 years, although licences issued in recent years have generally had terms of not more than 15 years.

NATURAL GAS EXPORT PRICES During 1994, North American natural gas prices, for the most part, trended downwards from the prices of a year ago. This reflects the increased natural gas production and deliverability that was brought onto the market throughout the year and adequate volumes of natural gas in storage. However, the impact of the price dampening on Canadian dollar export revenues was minimized by the movement in the U.S./Canada exchange rate. In 1994, Canadian export prices averaged \$2.34 per gigajoule at the international border, compared to \$2.47 in 1993.

The average cash price for spot natural gas over the year at the Henry Hub, Louisiana was \$US 1.92 per thousand cubic feet, which was \$US 0.20 per thousand cubic feet or nine percent lower than in 1993. The Henry Hub is located near the junction of several U.S. interstate pipelines and is the delivery point for natural gas futures contracts traded on the New York Mercantile Exchange. A direct link cannot be made between Henry Hub

TABLE 12
Canadian Natural Gas Supply and Disposition
(billion cubic)

	1993	1994 ^(c)	Percent change
Production	126.1	138.8	9.6
Imports	1.0	1.2	20.0
Total Supply^(a)	127.1	140.0	10.1
Domestic use ^(b)	66.0	66.8	1.2
Exports	62.9	70.8	12.6
Total Disposition^(a)	128.9	137.6	6.7

(a) The difference between total supply and total disposition is due to inventory changes and other adjustments

(b) Canadian consumption of natural gas produced in Canada

(c) Estimate

prices and Canadian export prices. However, the trend in Henry Hub prices is representative of overall trends in the U.S. market and is an important indicator of the potential direction of Canadian export prices. Many Canadian natural gas contracts use the New York Mercantile Exchange gas futures prices as a basis for determining gas export prices.

NATURAL GAS PIPELINE CAPACITY By year-end, the four largest interprovincial and international gas transmission systems, owned by **Alberta Natural Gas Company Ltd**, **Foothills Pipe Lines Ltd.**, **TransCanada PipeLines Limited** and **Westcoast Energy Inc.**, had a combined delivery capacity of approximately 350 million cubic metres (12.2 billion cubic feet) per day. This is about six percent more than in 1993, and is largely attributable to capacity additions that went into service during the year on **TransCanada PipeLines Limited** and **Westcoast Energy Inc.**'s pipelines. About 230 million cubic metres (8.1 billion cubic feet) per day of the combined delivered capacity was available for export service.

NATURAL GAS LIQUIDS (excluding pentanes plus) In 1994, total production of natural gas liquids from gas plants and refineries is estimated to be 79 500 cubic metres (500 800 barrels) per day. As in 1993, ethane production was 30 300 cubic metres (190 900 barrels) per day. Propane production was 30 100 cubic metres (189 600 barrels) per day, an increase of 0.7 percent over 1993, and the production of butanes was 19 100 cubic metres (120 300 barrels) per day, an increase of two percent over 1993 levels.

Total exports of natural gas liquids during 1994 were 24 500 cubic metres (154 400 barrels) per day. Ethane exports were 3 900 cubic metres (24 600 barrels) per day, propane exports were 15 100 cubic metres (95 100 barrels) per day and butanes exports were 5 500 cubic metres (34 700 barrels) per day. During 1994, exports of ethane increased by 34 percent from 1993, propane increased by 18 percent and butanes increased by two percent.

The U.S. Midwest continued to be Canada's largest market for propane and butanes, receiving almost 73 percent of the total export volume. Smaller amounts were delivered to the U.S. East Coast and West Coast. The largest exporters of propane were, in order of rank, **Amoco Canada Petroleum Company Ltd.**, **Kinetic Resources (LPG)**, **Imperial Gas Liquids** and **Petro-Canada Hydrocarbons Inc.**, while the major exporters of butanes were **Amoco**, **Petro-Canada**, **Kinetic** and **NGL Supply Co. Ltd.**

The estimated value of natural gas liquids exports in 1994 was \$810 million, compared with \$770 million in 1993.

CANADIAN ELECTRICITY

ELECTRICITY GENERATING CAPACITY In 1994, Canada's net generating capacity is estimated to be 108 terawatts, an increase of about 0.5 percent over 1993.

CANADIAN ELECTRICITY GENERATION AND CONSUMPTION Total net generation of electricity in 1994 is estimated to be 542 terawatt hours, up six percent from 1993. Of Canada's total generation, approximately 61 percent was from hydroelectric generation, 19 percent from conventional thermal generation and 20 percent from nuclear generation. Total Canadian consumption in 1994 is estimated to be 498 terawatt hours, a 2.8 percent increase over 1993 (Table 14).

ELECTRICITY EXPORTS Electricity sales during 1994 continued the upward trend which commenced in 1991 and continued through 1993 due mainly to greater demand in the U.S. markets

TABLE 13
Natural Gas Liquids Supply and Disposition^(a)
(thousand cubic metres per day)

	1993	1994 ^(c)	Percent change
Production	78.8	79.5	0.9
Imports	0.3	0.9	200.0
Total Supply^(b)	79.1	80.4	1.6
Domestic use	58.1	53.6	-7.7
Exports	21.3	24.5	15.0
Total Disposition^(b)	79.4	78.1	-1.6

(a) Includes ethane, propane and butanes

(b) The difference between total supply and total disposition is due to inventory changes and other adjustments

(c) Estimate

TABLE 14
Canadian Electricity Supply and Disposition^(a)
(terawatt hours)

	1993	1994 ^(b)	Percent change
Production ^(a)	511.1	541.9	6.0
Imports	2.6	0.9	-65.0
Total Supply	513.7	542.8	5.7
Domestic use	484.3	498.0	2.8
Exports	29.4	44.8	52.4
Total Disposition	513.7	542.8	5.7

(a) Source: Statistics Canada

(b) Estimate

combined with favourable hydraulic conditions. Total export sales were 44.8 terawatt hours, an increase of 52 percent over 1993, with an associated revenue of \$1.3 billion, a 55 percent increase over last year. This is the highest total of exports since 1987 and the second highest export quantity ever. Firm and interruptible sales increased 23 percent and over 100 percent, respectively. The average price of firm and interruptible exports rose six and eight percent, respectively, over 1993 values.

New Brunswick Power's firm exports decreased 50 percent while interruptible export sales increased 110 percent. High reservoir levels in Quebec and increased demand in the New York market led to a 25 percent increase in firm sales and an eight percent increase in interruptible exports over 1993. **Ontario Hydro's** interruptible exports rose by 164 percent as the utility acquired several new American customers. **Ontario Hydro's** firm exports accounted for less than one percent of its total export sales. **Manitoba Hydro** increased its firm export sales by 13 percent mainly due to higher seasonal diversity sales. Interruptible export sales by **Manitoba Hydro** fell by nine percent. **B.C. Hydro's** total export sales rose by 50 percent mainly due to an increase in

interruptible exports. **B.C. Hydro's** firm sales fell by nine percent in 1994, compared to 1993.

Hydro power still remains the leading source of production for all exports of electricity although its share decreased to 68 percent from 77 percent in 1993. Coal generated exports increased to 19 percent in 1994 from 13 percent in 1993, mainly due to **Ontario Hydro's** increased exports. Other fuels used to produce electricity for export included: nuclear at five percent, oil at two percent and other (unassignable) at six percent.

Figure 12 shows the origin and destination of electricity exports by exporting province and importing region or state for 1994. Figure 12 also illustrates interprovincial transfers within Canada for the period November 1993 to October 1994. New York state was the biggest single U.S. importer with about 29 percent, while the New England states accounted for about 26 percent of Canadian exports.

ELECTRICITY IMPORTS Imports decreased by 65 percent during 1994 to 0.9 terawatt hours.

FIGURE 12
International and Interprovincial Transfers
of Electricity
 (gigawatt hours)



Data for interprovincial transfers of electricity are from 1 November 1993 to 31 October 1994 and are compiled from Statistics Canada Electric Power Statistics Monthly.

Data for United States imports and exports are for 1994 (excludes exchanges) and are compiled by the NEB.

BOARD ACTIVITIES – HEARINGS AND REVIEWS

For certain applications, the Board holds public hearings at which applicants and interested persons have full rights of participation. Such hearings may be either written or oral. Oral hearings are held at locations across Canada if there is a particular local interest in the application in question. In 1994, the Board held oral hearings in Vancouver, British Columbia, Calgary, Alberta and Ottawa and London, Ontario. A list of the Reasons for Decision published in 1994 as a result of hearings held by the Board appears on page 29.

PIPELINE FACILITIES

During 1994, the Board held oral and written public hearings on five facilities applications and rendered a decision on a hearing held in 1993.

Following a hearing held in November 1993 (OH-1-93), an application from **Interprovincial Pipe Line Inc.** was approved to expand its oil pipeline facilities in Western Canada at a cost of approximately \$256 million.

In a decision issued on 28 April, the Board denied applications by **InterCoastal Pipe Line Inc.** and **Interprovincial Pipe Line Inc.** to convert an existing crude oil pipeline in southern Ontario to natural gas transmission and to construct additional facilities. An oral hearing had been held in January and February 1994 (GH-4-93).

In a decision issued on 12 May, **Westcoast Energy Inc.** received Board approval to construct the Sukunka Fuel Gas Pipeline, at a cost of approximately \$8.1 million, in northeastern British Columbia. An oral hearing had been held in April (GH-1-94).

Following a hearing held in July (GH-2-94), the Board issued a certificate in September approving an application by **TransCanada PipeLines Limited** to construct new compression and pipeline facilities in Ontario and Quebec in 1995 and 1996 at a cost of approximately \$189.3 million.

A hearing was held in October (GH-4-94) on an application by **Foothills Pipe Lines (Alta.) Ltd.** to construct a pipeline, metering and related facilities between Princess, Alberta and Wild Horse, Alberta. A decision is expected early in 1995.

On 16 December, the Board issued a certificate to **Novagas Clearinghouse Pipelines Ltd.** to construct the Kahntah natural gas pipeline from northeastern British Columbia into Alberta. A written hearing was held on the application (GHW-1-94).

PIPELINE TOLLS

The Board conducted two oral public hearings, including the Multi-Pipeline Cost of Capital hearing, and one written proceeding on pipeline tolls in 1994, and rendered decisions on two hearings that had been held in 1993.

On 7 February, the Board issued a decision setting new tolls to be charged in 1993 and 1994 by **Trans Mountain Pipe Line Company Ltd.** which resulted in an approved cost of service of \$84 million for 1993 and \$91.3 million for 1994 and tolls that were approximately 11.8 percent lower for 1993 than 1992 and 5.3 percent higher for 1994 than 1993. A hearing had been held in November and December 1993 (RH-3-93).

New tolls to be charged by **Westcoast Energy Inc.** effective 1 January 1994 were approved in a decision released on 31 March. The decision resulted in an approved cost of service of \$368 million and in tolls that were approximately 4.5 percent lower than the 1993 tolls. A hearing had been held in October and November 1993 (RH-2-93).

In a decision issued on 30 June, the Board approved new tolls to be charged in 1994 by **TransCanada PipeLines Limited** which resulted in an approved cost of service of \$1.6 billion and a 0.8 percent decrease in the firm service toll to the Eastern Zone. A hearing was held in February and March (RH-4-93).

At year-end, the Board was conducting a written hearing on tolls to be charged by **Trans Quebec & Maritimes Inc.** in 1995 (RHW-1-94).

The Board held the Multi-Pipeline Cost of Capital hearing in October, November and December on the cost of capital for seven of the ten Group 1 companies under its jurisdiction. The hearing was held to decide the cost of capital for 1995 and future years. The Board would like to avoid annual hearings on the cost of capital for major Group 1 pipeline companies.

NATURAL GAS EXPORTS

The Board conducted two oral public hearings on natural gas exports in 1994.

Following a hearing held in January (GH-5-93), the Board issued 16 licences on 15 March for the export of some 34.9 billion cubic metres (1.2 trillion cubic feet), over terms ranging from four to 15 years, to **Brooklyn Navy Yard Cogeneration Partners, L.P.**, **Husky Oil Operations Ltd.**, **ProGas Limited**, **Shell Canada Limited** and **Western Gas Marketing Limited**.

The Board also amended two of **ProGas**' existing licences by reducing the volumes in one licence and by extending the term and increasing the total quantity of natural gas for export in another licence. The gas is destined for the states of Massachusetts, Michigan, New York, Washington, and Wisconsin. The Board subsequently reviewed these decisions and issued the results of the review in June (see below under **Reviews**).

Following a hearing held in September and October (GH-3-94), seven licences for the export of some 12 billion cubic metres (424 billion cubic feet), over periods ranging from nine to 15 years, were issued on 30 November to **CanStates Gas Marketing**, **Chevron Canada Resources**, **Renaissance Energy Ltd.** and **Western Gas Marketing Limited**. The gas is destined for the states of Maine, Michigan, Nebraska, New Hampshire and Oregon.

REVIEWS

On 22 April, the Board denied a request from **Foothills Pipe Lines Ltd.** for a review of decision RH-1-93 regarding its tolls for 1993.

On 7 March, **Rocky Mountain Ecosystem Coalition** requested a review of decision GH-5-93 regarding various applications to export natural gas. The Board conducted a review and decided that it has jurisdiction to consider the environmental effects and directly related social effects of upstream facilities and activities

but only where, in specific applications, there is the necessary connection between those upstream matters and the proposal to export gas.

On 21 October, the Board denied a request from **PanCanadian Petroleum Limited** for review of a decision on an application by **Niagara Gas Transmission Limited** to construct certain facilities across the Ottawa River.

APPLICATIONS RECEIVED AND TO BE CONSIDERED IN 1995

The Board will hold public hearings in 1995 on applications filed in 1994 by:

TransCanada PipeLines Limited for approval of tolls to be charged in 1995 (RH-3-94).

Interprovincial Pipe Line Inc. for approval of tolls to be charged in 1995 (RH-4-94).

Westcoast Energy Inc. for approval of tolls to be charged in 1995 (RH-5-94).

Westcoast Energy Inc. for approval of the Fort St. John Expansion Project (GH-5-94).

Westcoast Energy Inc. for approval of the Grizzly Valley Expansion Project (GH-6-94).

BOARD ACTIVITIES – STUDIES AND REPORTS

In fulfilment of its advisory function, the Board consulted widely with government agencies, industry and interested persons and undertook new studies and published a number of reports.

EXPORTS OF OIL SANDS PRODUCTION

In May, the Minister released a report entitled *Report of an Inquiry into Licensing of Long-term Exports of Oil Sands Production* which was prepared by the Board at the Minister's request. The report outlined some options for the regulation of long-term exports of oil from oil sands production and contained a summary of the comments of interested persons and the views of the Board.

INTER-UTILITY ELECTRICITY TRADE

The Board's report entitled *Review of Inter-utility Trade in Electricity* was released by the Minister in June. The report outlines options available to electric utilities, with and without

federal and provincial government support and participation, to achieve enhanced levels of inter-utility trade and associated savings and efficiency. A companion report entitled *Review of Inter-utility Trade in Electricity – Analysis of Submissions* was released simultaneously by the Board. The second report summarizes and analyzes the responses received from provincial governments, utilities and interested persons.

ENERGY SUPPLY AND DEMAND

In 1994, the Board published its latest long-term Canadian energy outlook entitled *Canadian Energy Supply and Demand 1993-2010*. The study is composed of three volumes: the *Trends and Issues* report (released in July), the *Technical Report* and the *Appendix to the Technical Report* (both released in December). In the analysis, the Board focused on the implications of:

- (a) the impact of technological changes on natural gas supply costs and, in turn, the associated implications for the demand for and supply of all energy commodities;

- (b) evolving oil supply technologies and varying oil prices for Canadian oil supply;
- (c) a more energy-intensive economy for energy demand; and,
- (d) more inter-utility planning of electricity supply, together with open access to transmission facilities, for the pattern of electricity generation and trade.

SECONDARY MARKET FOR NATURAL GAS TRANSPORTATION SERVICES

In July, the Board asked the natural gas industry to comment both on possible changes to the procedures which govern trading of pipeline capacity in the “secondary market” and on the appropriateness of removing the price cap on trades. The Board’s intention in seeking comments is to continue facilitating the development of more efficient markets.

Currently, natural gas shippers who have contracted for transportation capacity with pipeline owners are permitted to trade their unused capacity in the “secondary market” when their own requirements for transportation capacity fall short of contracted volumes. Use of the secondary market helps to reduce the financial risks associated with long-term contracts to reserve pipeline capacity. However, the price of capacity traded in secondary markets is not permitted to exceed the approved rate charged by the pipeline for primary capacity.

At year end, the Board was still reviewing the submissions received.

NATURAL GAS ASSESSMENT NORTHEAST BRITISH COLUMBIA

In January, this report was distributed to make the Board’s analytical processes and procedures known to the public and to solicit comments from industry and other government agencies on how the Board evaluates undiscovered potential. The specific project area, northeast British Columbia, was chosen as an example application for this methodology. The conclusions and estimates

from this study were used in support of the Board’s ongoing assessment of Western Canada natural gas supply.

PETROLEUM RESOURCES ASSESSMENT OF THE LIARD PLATEAU AREA AND EAGLE PLAIN BASIN, YUKON TERRITORY, CANADA

These two studies, which were issued in November, were initiated out of discussions with Yukon government officials. They are part of the Board’s ongoing work to provide the Yukon government with technical and advisory support leading up to the transfer of responsibility for oil and gas regulation to the territorial government under the terms of the Yukon Accord. These reports represent the detailed analysis of two sedimentary basins that have the best petroleum potential in the Yukon and will likely receive the greatest interest from industry should land issuances in the Yukon proceed.

UNCONNECTED GAS POOL STUDY – PHASE 1: EVALUATION OF UNCONNECTED RESERVES IN ALBERTA

During 1994, the Board undertook a study to assess the quality and economic viability of natural gas resources in a sample of the largest unconnected pools across Alberta and all of the unconnected pools in central Alberta. The Board proposes to issue the report in January 1995 for comment by industry, government agencies and interested persons.

HORIZONTAL WELL STUDY

In its ongoing assessment of the impact of technological developments on crude oil supply, the Board is investigating horizontal well technology. In 1994, the Board continued its work to update a working document, issued in 1993 for the purpose of consultation with industry, entitled *Horizontal Oil Wells: Economics and Potential Impact on Reserves and Supply of Canadian Conventional Crude Oil*. A final report will be issued in 1995.

OTHER BOARD ACTIVITIES

PIPELINE FACILITIES

In 1994, the Board approved the construction of some 1 220 kilometres (756 miles) of pipeline as well as a variety of other pipeline facilities. Further information on certificates and orders issued during 1994 are available in Appendices.

The Board also provided regulatory support to the **Northern Pipeline Agency** in respect of a compressor unit installation by **Foothills Pipe Lines (Sask.) Ltd.** on the Eastern Delivery Leg of the Prebuild. The unit went into service in mid-August.

PIPELINE SAFETY

In 1994, there were 69 incidents reported under the Board's *Onshore Pipeline Regulations*. Of these 69 incidents, two were caused by defective welds, seven by corrosion, 10 by third party damage, 21 by material failure, and 29 by other miscellaneous causes. The Board conducted field investigations into 11 of these pipeline incidents which included two gas pipeline ruptures, two oil pipeline breaks, one high vapour pressure pipeline break, three sour gas releases at gas plants, two pipeline construction injuries, and one fatality which resulted from a worker being struck by motorized equipment.

The Board notes that the number of incidents varies from year to year as a function of construction activity, among other factors. The Board continues to monitor trends and has not identified any particular factors which has lead to an increased number of incidents in 1993 and 1994 (Table 15).

In 1994, the Board inspected the pipeline facilities of 14 companies, including all major Group 1 companies. These inspections included all six of **Westcoast Energy Inc.**'s gas plants, and the construction activities of **Interprovincial Pipe Line Inc.** and **TransCanada PipeLines Limited**.

The Board conducted operations safety audits on 12 companies in 1994 by reviewing the company's safety manuals and documentation. The Board also conducted audits of the public awareness programs of 11 companies. This activity analyzes the company's records of recent crossings of its pipeline(s) and its activities with regard to promoting public awareness to minimize damage of its facilities. The number of violations of the Board's *Pipeline Crossing Regulations* decreased from 44 in 1993, to 36 in 1994. This is largely due to a greater level of public awareness of the requirements of the Regulations, in particular, the requirement to notify pipeline companies prior to undertaking excavation or construction which could affect pipelines.

FINANCIAL REGULATION OF PIPELINES

The Board conducted a number of financial regulatory audits of pipeline companies in 1994 as part of its surveillance responsibility. These audits included examination of issues raised in recent toll proceedings such as the companies' regard for economy and efficiency and the adequacy of cost allocation. Audit reports were released in 1994 for the following companies: **Centra Transmission Holdings Inc.**, **Foothills Pipe Lines Ltd.**, **Interprovincial Pipe Line (NW) Ltd.**, **Interprovincial Pipe Line Inc.**, **Niagara Gas Transmission Ltd.**, **Trans Mountain Pipe Line Company Ltd.**, **Trans-Northern Pipelines Inc.** and **Westcoast Energy Inc.**

NATURAL GAS, OIL AND ELECTRICITY

During the year the Board issued 106 short-term orders authorizing the export of natural gas for periods of up to two years.

In 1994, the Board issued 126 orders for the export of crude oil and petroleum products, 55 for the export of propane and 47 for the export of butanes. No orders were issued for the export of ethane.

During the year, the Board issued seven permits authorizing the export of up to 33 200 gigawatt hours of electricity over periods of up to 20 years. The Board also issued two permits authorizing the construction of two international power lines, amended the conditions of one existing licence and three permits, and revoked one certificate.

TABLE 15
Types of Pipeline Incidents – 1990-1994

Year	1990	1991	1992	1993	1994
Liquid pipelines					
Breaks	1	1	2	1	4
Leaks	11	6	8	10	9
Others	7	10	7	12	10
Gas pipelines					
Breaks	4	6	4	2	6
Leaks	5	9	7	17	12
Others	19	17	20	23	27
Total	47	49	48	65	69

ENVIRONMENTAL MATTERS

In 1994, the Board conducted 44 environmental inspections related to various pipeline projects, and fifteen investigations related to environmental concerns raised by landowners.

The Board carried out environmental assessments of more than 160 projects in fulfilment of obligations under the *Environmental Assessment and Review Process Guidelines Order*, the *National Energy Board Act* and the *Canada Oil and Gas Operations Act*. These included assessments of pipeline facilities applications, energy export applications, drilling programs, development plans, seismic and geological programs, and research and development activities.

The Board continues to update its data base of PCB-contaminated material storage facilities. Seven companies under the Board's jurisdiction had indicated that they had PCB-contaminated material in storage.

The Board continued its examination of environmental issues which may impact on its regulatory responsibilities and was involved with numerous committees which undertook projects to examine issues and regulations related to atmospheric emissions, waste treatment, river crossings and underground storage tank.

The Board provided advice on the development of the four key regulations to define the scope of assessment under the *Canadian Environmental Assessment Act* and regulations, and it also initiated the review and update of the provisions of two environmental guidelines related to the *Canada Oil and Gas Operations Act*.

EMERGENCY PROCEDURES

In fulfilment of its obligations under the *Canada Oil and Gas Operations Act*, the Board continued efforts at defining the procedures to be followed by the Board, industry and other government departments involved in an emergency on frontier lands.

The Board is currently developing a response plan outlining its responsibilities under the *National Energy Board Act* similar to that of the *Canada Oil and Gas Operations Act*.

ENVIRONMENTAL STUDIES RESEARCH FUNDS

The Environmental Studies Research Funds (ESRF) finances a research program that sponsors pertinent environmental and social studies that will, in due course, assist government decision-making related to oil and gas exploration and development on Canada's frontier lands. Funding for ESRF is provided by levies on frontier land interests held by oil and gas companies. The Board provides the ESRF chairmanship, program administrators, project managers, and scientific authorities and, as well, provides financial accountability to the **Ministers of Indian and**

Northern Affairs Canada and **Natural Resources Canada** for the levies collected and spent on their behalf. The ESRF administration is presently completing a program of six studies which were initiated over the past four years. No new studies have been supported for 1994 and all current studies are expected to be published by mid-1995.

With frontier activities at a low level, the Board participated in a program review task force that recommended maintaining ESRF as a mechanism for joint industry-government research participation but reducing the levy to zero until activities and interest in frontier lands increases.

PROGRAM OF ENERGY RESEARCH AND DEVELOPMENT

The federal Program of Energy Research and Development (PERD) funds scientific and technological programs investigating aspects of exploration, production, transportation, and use of energy. To ensure a sound knowledge basis for its regulatory functions, the Board presently manages some \$2 million of research funds in areas of oil, gas and electricity; renewable energy; and, alternative transportation fuels. Within the various PERD committees, the Board undertakes a variety of roles including initiating, promoting, and managing projects, participating and chairing committees, developing research and development strategies and priorities, and providing secretariat functions.

Project areas where the Board takes a leadership role include ice-structure interaction, structural engineering, evacuation technologies, environmental forecasting and design, marine and pipeline transportation of oil and gas, climate change issues, ground water and soil remediation and oil extraction technologies.

FRONTIER LANDS – OIL AND GAS

ADVICE The Board provided technical advice to the Northern Oil and Gas Directorate of the **Department of Indian Affairs and Northern Development** in support of northern rights management. Advice was provided on operational constraints and environmental requirements to be included in exploration permits. Specific advice was given regarding the expansion of the Proven Area Agreement for Norman Wells and the extension of the production term. The Board also provided technical support to the Frontier Lands Management Branch of **Natural Resources Canada** and the two offshore petroleum boards in the areas of regulation development, offshore oil and gas development, safety and environment.

The Board also provided technical assistance to the **Departments of Indian Affairs and Northern Development** and **Natural Resources Canada** in order to assist with the

FIGURE 13
Gas Pipeline Companies Regulated by
the National Energy Board



- | | | |
|--|--|--|
| 1. Alberta Natural Gas Company Ltd | 15. Huntingdon International Pipeline Corporation | 27. POCO Petroleum Ltd. |
| 2. Amerada Hess Canada Ltd. | 16. Koch Exploration Canada, Ltd. | 28. Portal Municipal Gas Company Canada Inc. |
| 3. Amoco Canada Petroleum Company Ltd. | 17. Many Islands Pipe Lines (Canada) Limited | 29. Remington Energy Ltd. |
| 4. Amoco Canada Resources Limited | 18. Mid-Continent Pipelines Limited | 30. Revenue Canada - Customs and Excise |
| 5. Blue Range Resource Corporation | 19. Minell Pipeline Ltd. | 31. SCL Quebec Pipeline Inc. |
| 6. Bow Valley Industries Ltd. | 20. Morgan Hydrocarbons Inc. | 32. St. Clair Pipelines Ltd. |
| 7. Canadian Hunter Exploration Ltd. | 21. Murphy Oil Company Ltd. | 33. Talisman Energy Inc. |
| 8. Canadian-Montana Pipe Line Company | 22. Niagara Gas Transmission Limited | 34. TransCanada Pipelines Limited |
| 9. Centra Transmission Holdings Inc. | 23. Novacorp International Pipelines Ltd.
(not built) | 35. Trans Québec & Maritimes Pipelines Inc. |
| 10. Champion Pipe Line Corporation Limited | 24. Novagas Clearinghouse Pipelines Ltd.
(not built) | 36. Union Gas Limited |
| 11. Chief Mountain Gas Co-op Ltd. | 25. Peace River Transmission Company Limited | 37. Wascana Pipe Line Ltd. |
| 12. Consumers' Gas (Canada) Ltd. | 26. Petrorep Resources Ltd. | 38. Westcoast Energy Inc. |
| 13. ELAN Energy Inc. | | 39. 167496 Canada Ltd. |
| 14. Foothills Pipe Lines Ltd. | | |

FIGURE 14
Oil Pipeline Companies Regulated by
the National Energy Board



1. Amoco Canada Petroleum Company Ltd.

2. Aurora Pipe Line Company

3. Cochin Pipe Lines Ltd.

4. Dome Kerrobert Pipeline Ltd. and Pan Canadian
 Kerrobert Pipeline Ltd.

5. Dome NGL Pipeline Ltd.

6. Dome NGL Pipeline Ltd. and Amoco Canada
 Petroleum Company Ltd.

7. Ethane Shippers Joint Venture

8. Genesis Pipeline Canada Ltd.

9. Imperial Oil Resources

10. Interprovincial Pipe Line (NW) Ltd.

11. Interprovincial Pipe Line Inc.

12. Inverness Petroleum Limited

13. Joint Venturers of the Bi-Provincial Upgrader

14. Manito Pipelines Ltd.

15. Montreal Pipe Line Limited

16. Murphy Oil Company Ltd. (inactive)

17. Northwest Transmission Company Limited

18. Petroleum Transmission Company

19. Pouce Coupe Pipe Line Ltd.

20. SCL Pipeline Inc.

21. Sun Pipe Line Company

22. Trans Mountain Pipe Line Company Ltd.

23. Trans-Northern Pipelines Inc.

24. Wascana Pipe Line Ltd.

25. Westspur Pipe Line Company (1985) Inc.

26. Yukon Pipelines Limited

implementation phase of a northern accord with the Yukon government.

OPERATIONS Oil and gas production operations continued at the Norman Wells, Bent Horn, Pointed Mountain and Kotaneelee fields in the Northwest Territories.

In 1994, the Board approved applications to: redrill two gas wells located in the Pointed Mountain field situated in the southwest region of the Northwest Territories; drill two wells in the Cameron Hills area of the Northwest Territories; and abandon three wells near Tuktoyaktuk. At year-end the Board was considering an application, in consultation with other agencies and interest groups, for the abandonment of the Panarctic HMSTD et al Drake F-76 gas well in the Northwest Territories.

At the request of the **Canada-Nova Scotia Offshore Petroleum Board**, the Board staff carried out an inspection of the meteorological and oceanographic forecasting, measurement, and observing programs in support of the LASMO Cohasset-Panuke production project.

SAFETY The Board performed 54 well site and four oil and gas facility inspections on frontier lands during 1994. This included inspections to ensure compliance with the *Canada Oil and Gas Operations Act* and the appropriate *Occupational Health and Safety* legislation.

There were no lost time accidents reported during the past year related to oil and gas activities on frontier lands.

LEGAL ACTIONS, REGULATIONS AND GUIDELINES

SUPREME COURT OF CANADA

The Grand Council of the Crees (of Québec) and the Cree Regional Authority v. Attorney General of Canada and the National Energy Board.

The **Supreme Court of Canada** heard this appeal on 13 October 1993. The judgment of the Supreme Court was rendered on 24 February 1994 upholding the Board's original decision. The Court had been asked to decide whether a **Hydro-Québec** export licence application could be granted without certain costs disclosure and whether environmental conditions concerning generation facilities could be appended to the export licence.

FEDERAL COURT OF APPEAL

Foothills Pipe Lines Ltd. v. National Energy Board

On 22 December 1993 **Foothills Pipe Lines Ltd.** filed an application for leave to appeal the decision and order of the Board dated November 1993 fixing the tolls to be charged by the company effective 25 March 1993. This notice was filed and served upon the Board simultaneously with an application for review of the November 1993 decision of the Board. On 31 May the Board was advised by **Foothills Pipe Lines Ltd.** that it was withdrawing its application for leave to appeal.

Manitoba Hydro v. National Energy Board

The **Federal Court of Appeal** has been asked to overturn the operating conditions for certain **Manitoba Hydro** facilities which were required by the Board in an Amending Order dated 19 November 1992. Pursuant to an application brought by **Manitoba Hydro**, leave to appeal was granted 22 February 1993. The case has yet to be heard.

Rocky Mountain Ecosystem Coalition v. National Energy Board

On 15 April, the **Rocky Mountain Ecosystem Coalition**, an intervenor in the GH-5-93 proceeding, filed an application for leave to appeal the March 1994 decision of the Board granting natural gas export licences to the applicants. The **Rocky Mountain Ecosystem Coalition** also sought a review by the Board of this decision. Pursuant to a motion brought by the **Rocky Mountain Ecosystem Coalition**, the application for leave to appeal was held in abeyance pending the Board's decision in the review. Following the release of the review decision, the **Federal Court of Appeal** granted a further motion brought by **Rocky Mountain Ecosystem Coalition** to amend its pleadings to include the review decision in the application for leave to appeal. On 21 October the **Federal Court of Appeal** refused the application for leave to appeal.

Rocky Mountain Ecosystem Coalition v. National Energy Board

On 30 December the **Rocky Mountain Ecosystem Coalition**, an intervenor in the GH-3-94 proceeding, filed an application for leave to appeal the November 1994 decision of the Board granting natural gas export licences to the applicants. The **Rocky Mountain Ecosystem Coalition** also sought a review by the Board of this decision.

THE NATIONAL ENERGY BOARD ACT

BILL C-6 In May, Bill C-6, an *Act to amend the Canada Oil and Gas Operations Act, the Canada Petroleum Resources Act and the National Energy Board Act and to make consequential amendments to other Acts*, was passed by Parliament.

The amendments transferred authority to the Board to regulate frontier oil and gas activities, except in offshore areas adjacent to Nova Scotia and Newfoundland where there are federal/provincial shared management agreements.

Rights issuance matters remain under the authority of the Minister of Natural Resources and the Minister of Indian Affairs and Northern Development.

The amendments authorize the Board and its officers and employees to provide advice to ministers, officers and employees of government departments, ministries and agencies. They also transfer to the Board, from the Oil and Gas Committee, authority to hear appeals, hold inquiries and make orders in respect of declarations of significant discoveries and resource conservation matters.

REGULATIONS

The Board regularly reviews its many rules, regulations and guidelines to ensure that they are fully responsive to changing market conditions and to help identify ways of simplifying the regulatory process and eliminating any unnecessary regulatory burden.

Information on the status of amendments made to regulations during the year, together with plans for 1995, are included in the Board's quarterly *Regulatory Agenda* and in the *1995 Federal Regulatory Plan*. Amendments to the Board's regulations, either completed or in various stages of preparation for 1994, include the following:

REGULATIONS PURSUANT TO THE NATIONAL ENERGY BOARD ACT

Onshore Pipeline Regulations

Offshore Pipeline Regulations

Part VI Regulations

Electricity Regulations

Export and Import Reporting Regulations

Pipeline Crossing Regulations, Part I

Power Line Crossing Regulations

REGULATIONS PURSUANT TO THE CANADA OIL AND GAS OPERATIONS ACT

Canada Oil and Gas Geophysical Regulations

Canada Oil and Gas Diving Regulations

Canada Oil and Gas Drilling Regulations

Canada Oil and Gas Installations Regulations

Canada Oil and Gas Certificate of Fitness Regulations

FRONTIER REGULATIONS IN WHICH THE BOARD PARTICIPATED IN DRAFTING

Nova Scotia Offshore Area Petroleum Diving Regulations

Nova Scotia Offshore Petroleum Production and Conservation Regulations

Nova Scotia Offshore Petroleum Drilling Regulations

Nova Scotia Offshore Area Petroleum Geophysical Regulations

Nova Scotia Offshore Certificate of Fitness Regulations

Newfoundland Offshore Certificate of Fitness Regulations

Newfoundland Offshore Petroleum Production and Conservation Regulations

Newfoundland Offshore Area Petroleum Geophysical Regulations

Newfoundland Offshore Petroleum Drilling Regulations

RULES OF PRACTICE AND PROCEDURE

The Board has revised its *Rules of Practice and Procedure* and on 30 April 1993 submitted them to Treasury Board for comment and the Department of Justice for approval. Once approved by the Department of Justice, the Rules will be sent for publication in the *Canada Gazette*.

GUIDELINES

During the year, the Board undertook the review, with input from interested persons, of several of its guidelines as outlined below.

MEMORANDUM OF GUIDANCE—SURVEILLANCE REPORTS FILED PURSUANT TO THE TOLL INFORMATION REGULATIONS

In February, the Board issued the above-mentioned Memorandum of Guidance.

The Guidelines outlined certain modifications to the content and format of the reports so that the information provided by the Group 1 pipeline companies in these reports would be presented in a more effective manner.

GUIDELINES FOR FILING REQUIREMENTS

In April, the Board issued, for comment by interested persons, the above-mentioned Guidelines.

The Board, as part of its changes to the *Rules of Practice and Procedure*, is removing the filing requirements from the Rules and has decided to issue them separately as guidelines. This will allow greater flexibility to the Board to reflect policy and other changes in filing requirements. It also reflects recommendations made by the Minister's Advisory Panel on Regulatory Review (the

DeSorcy Report) that guidelines be considered instead of regulations, while still achieving the desired objectives.

At year end, the Board was still reviewing the comments received.

GUIDELINES RESPECTING PHYSICAL ENVIRONMENTAL PROGRAMS DURING PETROLEUM DRILLING AND PRODUCTION ACTIVITIES ON FRONTIER LANDS

In April, the Board, jointly with the **Canada-Newfoundland Offshore Petroleum Board** and the **Canada-Nova Scotia Offshore Petroleum Board**, issued *Guidelines Respecting Physical Environmental Programs during Petroleum Drilling and Production Activities on Frontier Lands*. These Guidelines clarify the requirements for operators in frontier lands to comply with the several federal, Newfoundland, and Nova Scotia frontier lands regulations requirements. The Guidelines enable the use of emerging technologies to reduce costs associated with compliance and harmonize regulations for exploration and production activities in federal, Newfoundland, and Nova Scotia frontier lands.

REGULATORY DIRECTION – STREAMLINING SECTION 58 APPLICATIONS

In July, the Board issued a general order relating to the streamlining of its section 58 process for routine pipeline facilities applications which raise no safety or environmental issues. The general order allows companies to complete routine or repetitive capital projects without first applying to the Board for approval and also allows companies to apply only once for certain multi-year projects. However, the costs of these projects will continue to be reviewed under Part IV of the Act prior to being included in the company's rate base for toll making purposes.

GUIDELINES FOR NEGOTIATED SETTLEMENTS OF TRAFFIC, TOLLS AND TARIFFS

In August, the Board issued a revised set of the above-mentioned Guidelines. A number of Group 1 pipeline companies have, in recent years, established task forces on tolls, tariff and operational matters. These task forces provide a forum for the pipeline companies, producers, shippers, consumers, governments and other

interested persons to exchange information, discuss issues, negotiate and ultimately settle issues before the formal hearing process is initiated before the Board. Sometimes it is possible for a task force to settle all outstanding issues, thus obviating the need for a public hearing by the Board.

OFFSHORE WASTE TREATMENT GUIDELINES, 1995

In October, the Board issued, for scientific and technical review by industry and other government departments, a second draft of the above Guidelines which includes guidelines on use of oil based drilling muds. Revised Guidelines are scheduled for issuance in 1995.

MEMORANDUM OF GUIDANCE – RETENTION OF ACCOUNTING RECORDS BY GROUP 1 COMPANIES PURSUANT TO GAS/OIL PIPELINE UNIFORM ACCOUNTING REGULATIONS

In November, the Board issued the above Memorandum of Guidance because it was of the view that the existing records retention requirement may impose an undue burden on pipeline companies. The Board considered it appropriate to extend to Group 1 companies the opportunity to dispose of certain accounting records.

FINANCIAL REGULATORY AUDIT POLICY

In December, the Board issued a revised Financial Regulatory Audit Policy codifying the Board's current audit practices and procedures.

In October 1989, the Board had sent a letter to all Group 1 companies and eight Group 2 companies which set out, for their information and guidance, the Audit Terms of Reference, the Regulatory Audit Objectives and the Guidelines on Audit Confidentiality.

Since then the manner in which toll and tariff regulation is being carried out has evolved. The Board considered it appropriate to update its audit policy taking into consideration comments made by participants in the Incentive Regulation Workshop held in January 1993.

INFORMATION AND PUBLICATIONS

The Board regularly publishes a number of documents including monthly energy export statistics, long term supply and demand analysis, gas market studies, Reasons for Decisions on applications and environmental studies. These documents are described in an information bulletin entitled *The Board's Publications*.

To provide current information on ongoing activities, such as the filing of applications, public hearings, decisions on applications, public consultations, changes to regulations and procedures, the Board regularly issues news releases which are available to the media and the public. There were 70 news releases issued in 1994. In addition, the Board publishes a quarterly *Regulatory Agenda* which provides detailed information on all its current regulatory and advisory activities.

The Board is also responsible for managing and disseminating the information it gathers while regulating oil and gas activities in northern Canada. The services provided to facilitate access to the frontier information are described in an information bulletin entitled *The Frontier Information Office*.

ACCESSING INFORMATION

Any person wishing to receive Board documents should ask to be placed on any one of seven "area of interest" mailing lists.

Many publications are also available in the Board's library. These include applications and submissions, transcripts of hearings, plus a variety of technical, legal, economic and energy studies. The Library is open to the public from 8:30 to 16:30 on business days.

Certain key documents of the Board are available to the public electronically by way of a bulletin board service that was launched in September 1994. The electronic bulletin board provides instant access (in both official languages) to news releases, hearing orders, the *Regulatory Agenda* and certain energy statistics, via ordinary computer modem hook-ups. This year, Appendices to the Annual Report have also been made available on this system. Other documents will progressively be made available on the system

MAJOR DOCUMENTS PUBLISHED IN 1994

REASONS FOR DECISION

Pipeline Facilities

Interprovincial Pipe Line Inc. – December 1993 – OH-1-93 (Issued in January 1994)

InterCoastal Pipe Line Inc. and Interprovincial Pipe Line Inc. – April 1994 – GH-4-93

Trans Mountain Pipe Line Company Ltd. – April 1994 – OHW-1-93

Westcoast Energy Inc. – May 1994 – GH-1-94

WBI Canadian Pipeline, Ltd. – Dissenting Opinions – 3 May 1994 – GH-R-1-93

TransCanada PipeLines Limited – September 1994 – GH-2-94

Novagas Clearinghouse Pipelines Ltd. – December 1994 – GHW-1-94

Tolls

Trans Mountain Pipe Line Company Ltd. – March 1994 – RH-3-93

Westcoast Energy Inc. – March 1994 – RH-2-93

TransCanada PipeLines Limited – June 1994 – RH-4-93

Gas Export

Various Gas Export Licences – February 1994 – GH-5-93

Various Gas Export Licences – June 1994 – GH-5-93 Review

Various Gas Export Licences – December 1994 – GH-3-94

Electricity Export

Hydro-Québec – December 1994

OTHERS

Natural Gas Resource Assessment – Northeast British Columbia – Working Document – January 1994

Review of Inter-Utility Trade in Electricity – January 1994

Review of Inter-Utility Trade in Electricity – Analyses of Submissions – April 1994

Report of an Inquiry into Licensing of Long-term Exports of Oil Sands Production – February 1994

Excavation and Construction Near Pipelines – February 1994

Regulatory Agenda – March, June and September 1994

1993 Annual Report – April 1994

Annual Report Pursuant to the Access to Information Act and the Privacy Act – April 1994

Response to Transportation Safety Board Recommendations in Report No. P91H0109 – June 1994

Canadian Energy Supply and Demand, 1993-2010, Trends and Issues – July 1994

Canadian Energy Supply and Demand, 1993-2010, Technical Report – December 1994

Canadian Energy Supply and Demand, 1993-2010, Appendix to Technical Report – December 1994

Response to Transportation Safety Board Recommendations in Report No. P92S0001 – September 1994

Petroleum Resources Assessment of the Liard Plateau Area – Yukon Territory – November 1994

Petroleum Resources Assessment of the Eagle Plain Basin – Yukon Territory – November 1994

Information Bulletin No. 2 – The Public Hearing Process – Update

Information Bulletin No. 4 – How to Participate in a Public Hearing – Update

Information Bulletin No. 7 – The N.E.B. Library – Update

Information Bulletin No. 10 – Pipeline Tolls and Tariffs; A Compendium of Terms – Update

Information Bulletin No. 11 – The Frontier Information Office – 1994 – New

For copies of any of the publications, please contact:

Regulatory Support Office

National Energy Board
311 Sixth Avenue S.W.
Calgary AB
T2P 3H2

Telephone: (403) 292-4800

Telecopier: (403) 292-5503

PIPELINE COMPANIES AND ELECTRIC POWER UTILITIES UNDER NATIONAL ENERGY BOARD JURISDICTION

The following is a list of the pipeline companies and electric power utilities which own and/or operate interprovincial or international pipelines or power lines under the Board's jurisdiction. The pipeline companies have been divided into two groups. Group 1 consists of the ten major pipeline companies which are audited by the Board on a regular basis and whose operating results are continuously monitored by the Board. The 53 companies under the Board's jurisdiction that are not included in Group 1 have been designated as Group 2 companies.

GROUP 1 GAS

Alberta Natural Gas Company Ltd.
Foothills Pipe Lines Ltd.
TransCanada PipeLines Limited
Trans Québec & Maritimes Pipeline Inc.
Westcoast Energy Inc.

GROUP 1 OIL AND PRODUCTS

Cochin Pipe Lines Ltd.
Interprovincial Pipe Line Inc.
Interprovincial Pipe Line (NW) Ltd.
Trans Mountain Pipe Line Company Ltd.
Trans-Northern Pipelines Inc.

GROUP 2 GAS

Amerada Hess Canada Ltd.
Amoco Canada Resources Limited
Amoco Canada Petroleum Company Ltd.

Blue Range Resource Corporation
Bow Valley Industries Ltd.
Canadian Hunter Exploration Ltd.
Canadian-Montana Pipe Line Company
Centra Transmission Holdings Inc.
Champion Pipe Line Corporation Limited
Chief Mountain Gas Co-op Ltd.
Consumers' Gas (Canada) Limited
ELAN Energy Inc.
Huntingdon International Pipeline Corporation
Koch Exploration Canada, Ltd.
Many Islands Pipe Lines (Canada) Limited
Mid-Continent Pipelines Limited
Minell Pipeline Ltd.
Morgan Hydrocarbons Inc.
Murphy Oil Company Ltd.
Niagara Gas Transmission Limited
Novacorp International Pipelines Ltd. (Not built)
Novagas Clearinghouse Pipelines Ltd.
Peace River Transmission Company Limited
Petrorep (Canada) Ltd.
Poco Petroleums Ltd.
Portal Municipal Gas Company Canada Inc.
Remington Energy Ltd.
Revenue Canada Customs and Excise
SCL Quebec Pipeline Inc.
St. Clair Pipelines Ltd.
Talisman Energy Inc.

Union Gas Limited
Wascana Pipe Line Ltd.
167496 Canada Ltd.

GROUP 2 OIL AND PRODUCTS

Amoco Canada Petroleum Company Ltd.
Aurora Pipe Line Company
Dome Kerrobert Pipeline Ltd. and Pan Canadian Kerrobert Pipeline Ltd.
Dome NGL Pipeline Ltd.
Dome NGL Pipeline Ltd. and Amoco Canada Petroleum Company Ltd.
Ethane Shippers Joint Venture
Genesis Pipeline Canada Ltd.
Imperial Oil Resources Limited
Inverness Petroleum Limited
Joint Ventures of the Bi-Provincial Upgrader
Manito Pipelines Ltd.
Montreal Pipe Line Limited
Northwest Transmission Company Limited
Novacor Chemicals (Canada) Ltd.
Petroleum Transmission Company
Pouce Coupé Pipe Line Ltd.
SCL Pipeline Inc.
Sun Pipe Line Company
Wascana Pipe Line Ltd.

Westspur Pipe Line Company Inc.
Yukon Pipelines Limited

ELECTRIC POWER UTILITIES

Boise Cascade Canada Ltd.
British Columbia Hydro and Power Authority
Canadian Niagara Power
Canadian Sandpoint Power Association
The Canadian Transit Company
Cedars Rapids Transmission Company Limited
Cominco Ltd.
Detroit and Canada Tunnel Corporation
Farms
Fraser Inc.
Hydro-Québec
Lac La Croix Power Authority
Maine and New Brunswick Power
Manitoba Hydro-Electric Board
James R. McMurrich (Niagara Mohawk Power Corporation)
New Brunswick Electric Power Commission
Ontario Hydro
Roseau Electric Cooperative Inc.
Saskatchewan Power Corporation
TransAlta Utilities Corporation
West Kootenay Power Ltd.

LIST OF APPENDICES AND STATISTICAL REPORTS

APPENDIX A

- A1 Canadian Energy Consumption
- A2 Crude Oil and Equivalent Supply and Disposition
- A3 Natural Gas Supply and Disposition
- A4 Natural Gas Liquids Supply and Disposition
- A5 Electricity Generation and Disposition

APPENDIX B

- B1 Certificates Issued During 1994 Approving the Construction of New Oil Pipeline Facilities Exceeding 40 Kilometres in Length
- B2 Orders Issued During 1994 Approving Oil Pipeline Facilities Including Pipeline Construction Not Exceeding 40 Kilometres in Length
- B3 Exports of Canadian Crude Oil and Equivalent – 1993 and 1994
- B4 Exports of Canadian Crude Oil and Equivalent – 1990-1994
- B5 Exports of Petroleum Products – 1994
- B6 Exports of Petroleum Products – 1993 and 1994

APPENDIX C

- C1 Certificates Issued During 1994 Approving the Construction of New Gas Pipeline Exceeding 40 Kilometres in Length
- C2 Orders Issued During 1994 Approving Gas Pipeline Construction Not Exceeding 40 Kilometres in Length
- C3 Licences and Long-Term Orders to Export Natural Gas as at 31 December 1994
- C4 Licences and Long-Term Orders to Import Natural Gas as at 31 December 1994
- C5 Natural Gas Exports by Export Point – 1990-1994
- C6 Total Net Exports of Propane and Butanes – 1993-1994

APPENDIX D

- D1 Certificates and Permits Issued During 1994 in Respect to International Power Lines
- D2 Amending Orders Issued During 1994 in Relation to International Power Lines
- D3 Licences Issued During 1994 Relating to the Export of Electricity
- D4 Permits and Orders Issued During 1994 Relating to the Export of Electricity
- D5 Electricity Exports 1994
- D6 Electricity Trade Between Canada and the United States (by Province)
- D7 Electricity Trade Between Canada and the United States (by American Region/State)

APPENDIX E

- E1 Financial Information – Group 1 Oil Pipeline Companies
- E2 Financial Information – Group 1 Gas Pipeline Companies

STATISTICAL REPORTS AVAILABLE

Crude Oil Supply, Disposition and Price Report	Monthly
Crude Run Report	Weekly
Electricity Exports and Imports	Monthly
Estimated Supply of Canadian	
Crude Oil & Equivalent	Quarterly
Exports of Petroleum Products	Monthly
LPG Underground Inventories in Canada	Monthly
Natural Gas Export and Imports	Monthly
Propane and Butane Export Report	Monthly
Western Canada Heavy and	
Light Crude Oil Availability	Quarterly

HOW TO OBTAIN COPIES OF APPENDICES AND STATISTICAL REPORTS ACCESS

Appendices listed above are available via the Board's Electronic Bulletin Board System. There is no charge for access to selected Board documents via the electronic bulletin board. The only cost to users is the normal phone company charge for connecting to the Calgary number: (403) 299-2751. The bulletin board is available around the clock, with the exception of specified hours for data loading or occasional system upgrades. A help line at 299-3919 will be operational from 9:30 a.m. to 10:30 a.m. (MT) during most business days. A user guide with instructions is available for reference. Users should set their communications software to:

- ◆ 300, 1200, 2400, 9600, 14 400 or 16 800 bps;
- ◆ full duplex;
- ◆ no parity;
- ◆ eight data bits; and
- ◆ one stop bit.

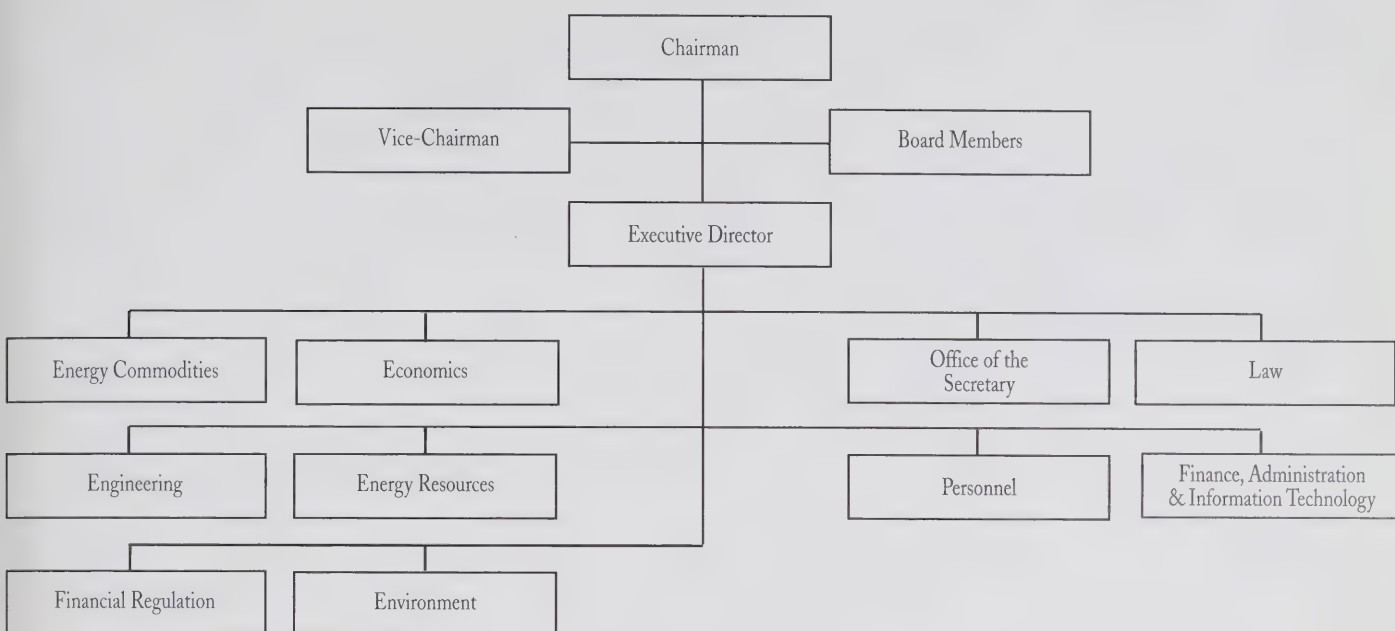
The statistical reports listed above are available on hard copies only.

For a hard copy or diskette of the Appendices or a hard copy of the Statistical Reports contact:

Regulatory Support Office
311 Sixth Avenue S.W.
Calgary AB T2P 3H2

Telephone: (403) 292-4800
Telecopier: (403) 299-5503

ORGANIZATION AS OF 31 DECEMBER 1994



BOARD MEMBERS

Roland Priddle	Chairman
Vacant	Vice-Chairman
Anita Côté-Verhaaf	Member
Céline Bélanger ^(a)	Member
Roy Illing	Member
Kenneth W. Vollman ^(b)	Member
Robert Andrew, Q.C.	Member

SENIOR STAFF OF THE BOARD

Gaétan Caron	Executive Director
Scott Richardson	Secretary
Judith Snider	General Counsel
Jim Thompson	Director – Personnel Branch
Jim Klotz	Director – Finance, Administration and Information Technology Branch
John Hayward	Director – Economics Branch
Raymond Choy	Director – Energy Commodities Branch
Graham Campbell	Director – Energy Resources Branch
John McCarthy	Director – Engineering Branch
Ken Sato	Director – Environment Branch
Robert Tarvydas	Acting Director – Financial Regulation Branch

(a) On 28 February 1995, Céline Bélanger resigned as a Board Member to take up the Chair of the Alberta Energy and Utilities Board

(b) On 3 February 1995, Kenneth Vollman was appointed Vice-Chairman of the Board

NATIONAL ENERGY BOARD STAFF – 1994

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Canada

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Our purpose is to make decisions that are fair, objective and respectful.
We achieve our purpose by regulating in the Canadian public interest the construction and the operation of interprovincial and international pipelines, the construction and the operation of international pipelines, export of oil and electricity, export and import of natural gas, and the exploration and development of oil and gas resources in frontier areas. When we have expertise derived from these regulatory functions, we also report to and advise the Minister of Natural Resources Canada on energy issues.

ANNUAL REPORT 1995



NATIONAL ENERGY BOARD

Metric Conversion Table

The National Energy Board uses the International System of Units. The energy units most commonly referred to in this report are the gigajoule and the petajoule. Combustion of a 30-litre gasoline tank expends approximately one gigajoule of energy. A petajoule is one million gigajoules. On average, Canada consumes about one petajoule of energy for all uses (heat, light and transportation) every 50 minutes.

The following conversion table is provided for the convenience of readers who may be more familiar with the Imperial System.

APPROXIMATE CONVERSION FACTOR

metre	=	3.28	feet
kilometre	=	0.62	mile
cubic metre of oil	=	6.3	barrels
cubic metre of natural gas	=	35.3	cubic feet
gigajoule	=	0.95	thousand cubic feet of natural gas at 1000 Btu per cubic foot or 0.165 barrels of oil, or 0.28 megawatt hours of electricity
hectare	=	2.47	acres
gigajoule	=	10^9	joules
petajoule	=	10^{15}	joules
gigawatt hour	=	10^6	kilowatt hour
terawatt hour	=	10^9	kilowatt hour

NOTE: The data and statistics for 1995 are estimates in most cases, since actual values were generally not available at the time of printing this report.

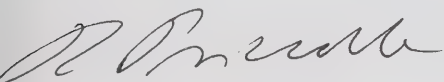
29 March 1996

The Honourable A. Anne McLellan, P.C., M.P.
Minister of Natural Resources Canada
Ottawa, Ontario

Dear Ms. McLellan:

I am pleased to submit the Annual Report of the National Energy Board for the year ending 31 December 1995, in accordance with the provisions of Section 133 of the *National Energy Board Act*, R.S.C. 1985, c. N-7.

Yours sincerely,

A handwritten signature in dark ink, appearing to read 'R. Priddle', written in a cursive style.

R. Priddle
Chairman

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(403) 292-4800

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* Appendices to the 1995 Annual Report have been published separately. A listing of these appendices can be found on page 42 and can be obtained in several ways. They can be accessed through the Board's electronic Bulletin Board System, on diskette or hard copy. See page 43 for instructions on how to access the appendices on the electronic Bulletin Board System, to request them on diskette or in paper format.

Chairman's Letter

1995 marked a turning point in the Board's economic regulation of pipelines. Some 27 years ago, TransCanada PipeLines applied to the Board to be regulated on a cost of service basis. For more than two decades this approach was applied to major Canadian pipelines. Their costs were litigated before the Board, often annually, in expensive proceedings requiring legal counsel and expert witnesses.

The Board prepared the way for an alternative approach by publishing guidelines for negotiated settlements in 1988 (updated in 1994), holding a seminar on incentive regulation in 1993 and establishing in 1995 the cost of capital for major pipelines on a generic basis, with provision for automatic annual adjustments to the rate of return on equity.

As a result, starting with Interprovincial Pipeline in February 1995, the Board has received for approval a succession of multi-year negotiated settlements, generally embodying provisions for incentives to reduce costs and share the benefits of such reductions between the pipelines and their shippers.

While the litigation route remains available for determining the amount of revenue a pipeline can recover in its tolls, it is likely in future to be used only selectively. Instead, we are entering an era of regulation which encourages consensus among all of a pipeline's stakeholders.

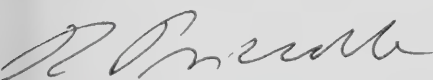
The matter of pipeline safety, a longstanding responsibility and preoccupation of the Board, is receiving even greater attention. This follows a failure due to stress corrosion cracking (SCC), on TransCanada PipeLines' system near Rapid City, Manitoba in July. The Board immediately stated its serious concern about the increased incidence of SCC and decided to hold a wide-ranging public inquiry into this phenomenon on Canadian oil and gas pipelines. This inquiry is now well in hand and a report on SCC is planned for mid-1996.

Environmental assessment and protection is another area where the Board has intensified its efforts, incorporating the Canadian Environmental Assessment Act (the CEA Act) into its procedures. An agreement was signed with the Minister of the Environment to conduct a joint panel review for the Express Pipeline Project. In addition, an agreement for a joint (multi-jurisdictional) panel to carry out the review of the proposed Sable Gas Project was drafted.

In the electricity sector, the effects of market deregulation in the United States were seen in the Board's electricity export permitting. All Canadian utilities which participate to a significant degree in cross border trade now have "blanket permits" enabling them to respond flexibly to commercial opportunities. For the first time, the Board issued similar blanket permits to independent Canadian electricity marketers.

The Board continued in 1995 to focus on efficiency and economy in its operations. Expenditures continue to decrease with a relative shift away from economic regulation towards safety and environment. Cooperative working relationships are in place to avoid duplication and maximize cooperation with authorities in Alberta, British Columbia, Ontario, Yukon and a number of federal agencies. The Electronic Regulatory Filing project, which holds the promise of substantial long-term efficiencies, is progressing well with the participation of some 20 government and private-sector organizations.

The Board is committed to making decisions that are fair, objective and respected and to its vision of being a workplace of choice. During the past year, the Board undertook an important internal project which identified fundamental areas for organizational change. In 1996, the Board will continue to concentrate its efforts in the areas of people management, work processes and planning activities. I wish to acknowledge our staff for their very active participation in this process of change, and for their essential contribution to the work of the Board throughout 1995.



R. Priddle

The National Energy Board

The **National Energy Board** (the Board) is an independent federal regulatory tribunal established in 1959. It reports to Parliament through the Minister of **Natural Resources Canada (NRCan)**. At year end, the Board had five permanent members, including the Chairman, and three temporary members. Two of these temporary members were appointed under the *National Energy Board Act* (the NEB Act) and the *Canadian Environmental Assessment Act* (the CEA Act) to form a joint panel to deal with the application by **Express Pipeline Ltd.** to construct an oil pipeline. The Board is supported by approximately 300 employees who provide advice on energy related subjects such as economics, engineering, environment, finance, geology, law and energy market developments and provide administrative and regulatory support.

The Board is a court of record and, with regard to attendance at hearings, the swearing in and examination of witnesses, the production and inspection of documents and the enforcement of its orders, has all the powers vested in a superior court of record. The Board's regulatory decisions and the reasons for them are issued as public documents.

The Board's regulatory powers under the NEB Act include the granting of authorizations for: the construction and operation of interprovincial and international oil and gas pipelines, international power lines and designated interprovincial power lines; the setting of tolls and tariffs for oil and gas pipelines under its jurisdiction; the export of oil, natural gas and electricity; and the import of natural gas.

The Board also has regulatory powers under the *Canada Oil and Gas Operations Act* (the COGO Act) and certain provisions of the *Canada Petroleum Resources Act* (the CPR Act) for oil and gas exploration and production activities on Canada's frontier lands not otherwise regulated by joint federal/provincial boards. The Board's mandate includes the provision of expert technical advice to the **Canada-Newfoundland and Canada-Nova Scotia Offshore Petroleum Boards**, **NRCan** and **Indian and Northern Affairs Canada (INAC)**.

The Board has responsibilities for environmental matters relating to the regulation of pipelines, international power lines, energy exports, and frontier oil and gas activities. The Board ensures that projects receive appropriate levels of environmental assessment, in accordance with the NEB Act, the COGO Act and the CEA Act.

The Board has an advisory function. The NEB Act requires that the Board keep under review matters relating to all aspects of energy supply, production, development and trade which fall within the jurisdiction of the federal government. The Board, when it has the expertise derived from its regulatory function, also carries out studies and prepares reports at the request of the Minister of **NRCan**.

The Board also has specific responsibilities under the *Northern Pipeline Act* and the *Energy Administration Act*. In addition, Board inspectors have been appointed safety officers by the Minister of **Human Resources Development Canada** to administer Part II of the *Canada Labour Code*.

The Board deals with approximately 750 applications annually. These range from straightforward and routine requests for Board orders to major applications for export licences, pipeline toll orders and certificates for the construction of new pipeline facilities, facility expansion projects and frontier matters. Those that do not involve a public oral or written hearing are dealt with by internal processes. The Board continues to take steps to simplify all these processes, while at the same time seeking to maintain their essential fairness, consistency, and openness to general scrutiny.

COOPERATION WITH OTHER AGENCIES

NORTHERN PIPELINE AGENCY

The Board provided technical and administrative assistance to the **Northern Pipeline Agency**, which pursuant to the *Northern Pipeline Act* has primary responsibility for overseeing the planning and construction of the Canadian portion of the proposed

Alaska Natural Gas Transportation System by **Foothills Pipe Lines Ltd.** An NEB Member serves as Administrator and Designated Officer of the Agency (position occupied during 1995 by Mr. Roy Illing).

TRANSPORTATION SAFETY BOARD OF CANADA

While the **National Energy Board** has exclusive responsibility for regulating the safety of oil and gas pipelines under federal jurisdiction, it shares the responsibility for investigating pipeline incidents with the **Transportation Safety Board of Canada**. The roles and responsibilities of each body with regard to pipeline accident investigations are outlined in a Memorandum of Understanding between the two boards.

HUMAN RESOURCES DEVELOPMENT CANADA

The Board has a Memorandum of Understanding with **Human Resources Development Canada** to coordinate the safety functions under the COGO Act and the NEB Act. This Memorandum of Understanding applies not only to works in the frontier areas, but also to all Board regulated pipelines and associated facilities.

YUKON TERRITORY GOVERNMENT

The Board continues to work with Yukon officials to facilitate the transfer of oil and gas regulatory responsibilities in accordance with the *Yukon Accord Implementation Agreement*. The Board also continues to provide expert technical advice to the **Yukon Territory Government**.

ALBERTA ENERGY AND UTILITIES BOARD (AEUB)

In 1995, the Board and the **AEUB** signed an *Emergency Response Memorandum of Guidance* to initiate a mutual aid agreement in the case of pipeline

incidents in Alberta. The agreement outlines the mutual assistance to be provided by both boards in respect of incident investigation and emergency response. The agreement is designed to provide a faster and more effective response by both boards to pipeline incidents in Alberta.

During the year, the Board continued its involvement in a Pipeline Task Force with the **AEUB**. The purpose of this task force is to develop consistent and compatible regulatory requirements. It is expected that this process will result in more efficient use of organizational resources, leading to a reduced regulatory burden on both the pipeline industry and the public.

The Board and the **AEUB** signed an agreement on the implementation of a common reserves database for oil and gas reserves in Alberta. The database was established in May. Both boards are committed to developing more efficient methods for maintaining estimates of reserves and exploring other opportunities for increasing efficiency.

BRITISH COLUMBIA MINISTRY OF ENERGY, MINES AND PETROLEUM RESOURCES

In January, the Board signed a technical protocol agreement with the **British Columbia Ministry of Energy, Mines and Petroleum Resources**, similar to the arrangement with the **AEUB** agreeing to work together to develop a common reserves database and explore other opportunities for collaboration.

COOPERATION WITH OTHER COUNTRIES

During 1995, the Board cooperated with several foreign countries by providing information on the Board's regulatory role, the environment, and other energy related matters. Board staff visited Mexico and Russia and hosted delegations from Australia, China, Columbia, the Czech Republic, Japan, Norway, Russia and Vietnam.

CYCLE TIMES FOR HEARINGS

The Board appreciates the need for prompt decisions on regulatory matters. It has taken steps over the years to clarify information requirements, develop issues lists for each hearing and implement other streamlining initiatives to speed up the regulatory process. Consistent with the Government of Canada's *Declaration of Quality Services*, the Board has examined the time spent considering applications requiring a hearing. It has decided to publish these statistics in its annual reports.

The Board is mindful of its roles and responsibilities as a quasi-judicial tribunal in bringing forward decisions that are fair, objective, and respected. Once an application is made to the Board, sufficient time must be provided for interested parties to become intervenors, review the application and prepare and argue their cases. The Board must allow enough time to consider all of the evidence presented before rendering its decisions, and must always respect its obligations under the *Official Languages Act*.

The information below provides the average processing time to hear, decide, and publish a decision (cycle time) for facilities, gas exports, and tolls and tariffs applications which required oral public hearings during the 1991-1995¹ period. These figures are average cycle times, measured from the date the Board issues its hearing order, signalling that the application is sufficiently complete to be set down for hearing, to the date of release of its reasons for decisions.

FACILITIES HEARINGS

The average cycle time declined from an average of 30 weeks over the 1991-1994 period to 21 weeks in 1995, a 30 percent reduction.

The impact on cycle times for projects requiring a Comprehensive Study under the CEA Act has yet to be established.

GAS EXPORT HEARINGS

From 1991-1993, the average cycle time for processing gas export applications, was 26 weeks. During that period, the Board accepted applications from various companies and accumulated them until it decided that there were a sufficient number to justify a hearing.

In 1993, the Board implemented a procedure to formalize gas export hearings at the rate of about two hearings per year, one in the Spring and one in the Fall. The Board started issuing formal Call for Applications notices that required applications to be filed by a certain date. Partly due to this process, the average cycle time for processing gas export applications has declined to 20 weeks in 1995, a 23 percent reduction over the average for the period 1991-93.

TOLL AND TARIFF HEARINGS

The average cycle time for tolls and tariffs applications has decreased from an average of 30 weeks over the 1991-1994 period to 25 weeks in 1995², a 17 percent reduction. The trend towards multi-year settlements is expected to reduce the time spent on processing toll applications in the future.

CONCLUSION³

In summary, for all three hearing types, the overall average cycle time has declined to 23 weeks for 1995 from 29 weeks overall for the period 1991-94, a reduction of approximately 20 percent. The Board will continue its efforts to reduce cycle times, where reductions can be made without compromising the fairness and integrity of Board proceedings.

1 The reader should note that from 1991-92, some cycle times were affected by the Board's move to Calgary.
2 The average cycle time of 25 weeks for 1995 does not include the 1994-1995 Multi-Pipeline Cost of Capital proceeding, because it was a Board-initiated hearing on a generic set of issues, and is therefore not representative of tolls and tariffs hearings.
3 The reader should note that the cycle times can be affected by the scope and complexity of the issues under examination.

ELECTRONIC REGULATORY FILING (ERF)

In 1993, the Board investigated the feasibility of moving away from a paper-based system to an electronic one. The ERF initiative will enable outside parties to exchange electronic documents with the Board and each other. The primary goals of ERF are to improve the regulatory process, reduce costs, accelerate document interchange through standardized filings and increase public access to Board information. The project has received support from the regulatory community.

In March, Preliminary Project Approval was obtained from the **Treasury Board of Canada** to proceed with the design phase of the initiative. Subsequently, external committees comprised of participants from regulated companies, energy industry associations and provincial regulatory agencies helped to develop a workplan for ERF design and document interchange standards. More than 18 organizations from the oil, gas and electricity industry are actively involved. An alliance with the **Ontario Energy Board** has also created opportunities for ERF benefits across jurisdictions.

In the Fall, the Board collaborated with ERF participants on a contract for the Information Architecture Design and Development phase of the project. During this phase, the contractor will work with a multi-disciplinary team to examine existing regulatory information flows and develop electronic models for improving these flows with ERF. The design will be tested in a proof of concept planned for early 1997. ERF Implementation Guidelines for regulated companies will follow, with full implementation to begin in 1998.

BOARD DOCUMENT SYSTEM (BDS)

In May, as part of its ERF initiative, an electronic document library was launched for public use. It is a resource that provides greater access to Board information, as well as the regulatory process. With a computer and modem, outside parties can search reasons for decision dating from 1985 and hearing transcripts from 1991. Other document types will be added gradually, as they become available in standardized electronic format. Currently, the only cost to users is long-distance telephone charges, if applicable, to connect to the system. Those interested in gaining access to the BDS may contact the Board for a user agreement.

BULLETIN BOARD SYSTEM (BBS)

The BBS is designed for the timely distribution of key Board documents in electronic format. Users can obtain instant access and download files in minutes. Documents available on the BBS include: news releases, hearing orders, Regulatory Agenda, statistical reports, decision overviews and appendices to the Annual Report. (Refer to page 43 for information on accessing the BBS.)

FINANCIAL MATTERS

The Board has been streamlining its business and regulating more effectively. As a result, the total budget decreased from \$32.0 million in the 1993-1994 fiscal year, to \$30.9 million in 1994-1995 with an estimated further reduction to \$30.3 for 1995-1996.

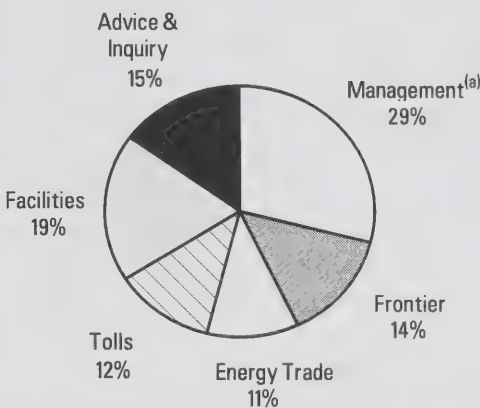
In 1991, the Board implemented the federal government's "Cost Recovery Plan", and since then has been recovering approximately 85 percent of its costs from the regulated industry.

Table 1 – Financial Summary
(fiscal year – 1 April - 31 March)

	Person-Years		Budget	
	Authorized	Utilized	Appropriation	Expenditure
			(\$000)	
1991-92 ^(a)	397	343	39 674	37 082
1992-93	396	323	33 570	27 447
1993-94	N/A ^(b)	323	32 031	28 439
1994-95	N/A	308	30 866	27 377
1995-96	N/A	310 ^(c)	30 271	27 961 ^(d)

- (a) Effective April 1991, 54 employees and \$6 million from the former **Canada Oil and Gas Lands Administration** were transferred to the Board. The Board relocated from Ottawa to Calgary in September of the same year
- (b) Since **Treasury Board** implemented Operating Budget control in 1991, authorization of person-years is no longer required
- (c) The forecast utilization of 310 person years is an average that includes provision for students and over-time. At year-end 1995, 280 people were employed at the Board
- (d) Estimates

Figure 1 – Actual Cost by Sub-activity
(fiscal year 1994-1995)



(a) Managerial direction and logistical support includes administrative, legal, financial, personnel, communications, corporate planning, electronic data processing and library services

NOTE: Detailed information on the Board's 1995 budget can be found in the National Energy Board's 1994-95 and 1995-96 Estimates, Part III, Expenditure Plans which are available on request.

Energy Overview

ENERGY PRODUCTION, CONSUMPTION AND TRADE

The energy sector plays an important role in the Canadian economy. In 1995, the energy sector represented about seven percent (approximately \$41 billion) of total Gross Domestic Product. Of this, approximately \$15 billion was generated in the upstream oil and gas sector, related energy industries and services accounted for the remainder. The energy sector directly employs more than 300 000 Canadians in all regions of the nation, about three percent of the total workforce.

The Canadian energy industry experienced another year of strong growth in 1995 as total energy production increased by 5.1 percent (Table 2). The production of all major fuels rose, except for nuclear. Domestic energy use rose 1.7 percent, only about one-third the rate of 1994. Total energy exports and imports are estimated to have risen by 10 and 3.6 percent, respectively.

Prices for the various energy forms exported are influenced by diverse factors. Petroleum prices are subject to changing global supply-demand conditions,

whereas natural gas and electricity prices tend to be influenced by North American supply-demand factors and long-term contractual agreements. In 1995, average export prices for light and heavy crude oil rose by 12 and 16 percent, respectively, those for gas declined by 20 percent, while electricity price changes varied by specific U.S. market segment. Domestic prices for oil and natural gas closely followed export prices. The lower prices for natural gas tended to decrease upstream activity such as sales of mineral rights, geophysical activity and well drilling.

Market shares of the various energy forms in domestic energy consumption (Table 3) have changed modestly in recent years. Since 1991, petroleum has steadily accounted for about one-third of energy needs. The market share of natural gas has fluctuated around 30 percent since 1991, with its share standing at 29.4 percent in 1995, only slightly higher than in 1991. Between 1991 and 1995, the share of hydroelectricity has remained at about 11 percent while that of nuclear has fluctuated between 9.9 and 11.7 percent. The share of renewable forms of energy, for example, passive and active solar, wind, wood and other forms of biomass, has risen slightly from 5.6 percent in 1991 to 5.8 percent in 1995.

Table 2 – Canadian Energy Supply and Disposition^(a)
(petajoules)

	1994	1995 ^(b)	Percent Change ^(b)
Production ^(c)	15 390	16 180	5.1
Imports	2 045	2 119	3.6
Total Supply	17 435	18 299	5.0
Domestic Use	10 558	10 734	1.7
Exports	6 877	7 565	10.0
Total Disposition	17 435	18 299	5.0

(a) Includes petroleum, natural gas, coal, hydro, nuclear and renewables

(b) Estimates

(c) Includes inventory change and other adjustments

Source: Statistics Canada and NEB

Table 3 – Canadian Energy Consumption by Sources – Market Shares
(percent and petajoules)

	1991	1992	1993	1994	1995 ^(a)
Petroleum	33.0	33.2	33.2	32.5	33.1
Natural Gas	29.3	30.0	29.7	29.2	29.4
Hydroelectricity	11.2	11.3	11.3	11.1	11.0
Nuclear	9.9	9.2	10.5	11.7	10.3
Coal	10.8	10.8	9.7	9.8	10.4
Renewables	5.6	5.4	5.3	5.7	5.8
Total - Petajoules	9 781	9 995	10 163	10 558	10 734

(a) Estimates

Source: Statistics Canada and NEB

As a result of increased export volumes, the value of gross exports of petroleum, natural gas and electricity increased from \$16.3 billion in 1994 to approximately \$16.9 billion in 1995 despite lower natural gas prices. The value of net energy exports decreased from \$9.5 billion in 1994 to about \$9.0 billion in 1995 (Table 4). Although natural gas contributed less to export earnings than petroleum, the value of net natural gas exports was much larger than the value of net petroleum exports. Net earnings from all forms of energy exports were equivalent to approximately 50 percent of Canada's net merchandise export earnings (\$16.9 billion) in 1995. On this basis, it can be seen that energy exports play a significant role in the nation's overall merchandise export surplus.

OIL AND GAS EXPLORATION AND DEVELOPMENT ACTIVITY

Data on petroleum exploration and development activity for the past five years are shown in Figures 2 to 5.

Drilling activity in 1995 approached the very high level attained in 1994, but the emphasis switched from gas to oil. Activity in the land sale and geophysical sectors decreased from 1994 levels.

Canadian oil and gas industry spending on provincial and federal exploration rights in western Canada totalled \$851 million in 1995, compared with \$1.4 billion in 1994, a decrease of 39 percent. Governments leased the mineral rights to 5.6 million hectares (13.9 million acres) during 1995, compared with 7.1 million hectares (17.5 million acres) in 1994. The average price per hectare in 1995 was \$152 (\$62 per acre), down from \$198 (\$80 per acre) in 1994.

Table 4 – Canadian Trade in Petroleum, Natural Gas and Electricity

	1994		1995 ^(a)	
	Petajoules	\$Billion	Petajoules	\$Billion
Exports				
Petroleum ^(b)	2 931	8.6	2 877	10.0
Natural Gas	2 661	6.4	2 953	5.7
Electricity ^(c)	161	1.3	157	1.2
Gross Exports	5 753	16.3	5 987	16.9
Imports				
Petroleum ^(b)	1 660	6.7	1 475	7.5
Natural Gas	42	0.1	27	0.1
Electricity ^(c)	3	--	10	0.3
Gross Imports	1 705	6.8	1 512	7.9
Net Exports	4 048	9.5	4 475	9.0

(a) Estimates

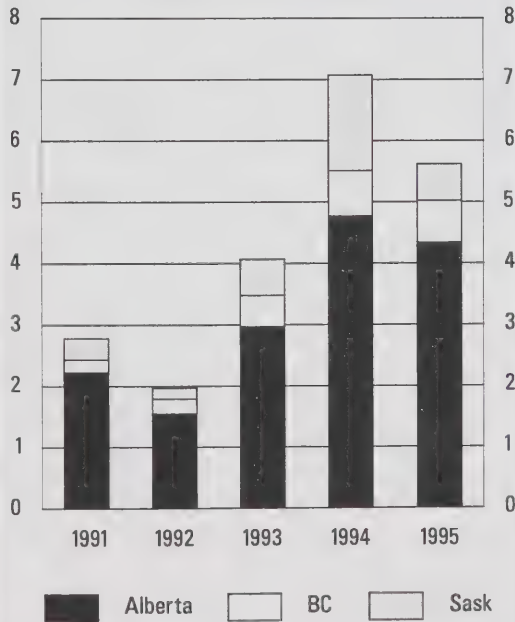
(b) Includes petroleum products and natural gas liquids

(c) Electricity is converted at 3.6 petajoules per terawatt hour

-- Negligible

Source: Statistics Canada and NEB

Figure 2 – Sales of Exploration Rights in Western Canada
(million hectares leased)



Source: Nickle's Daily Oil Bulletin

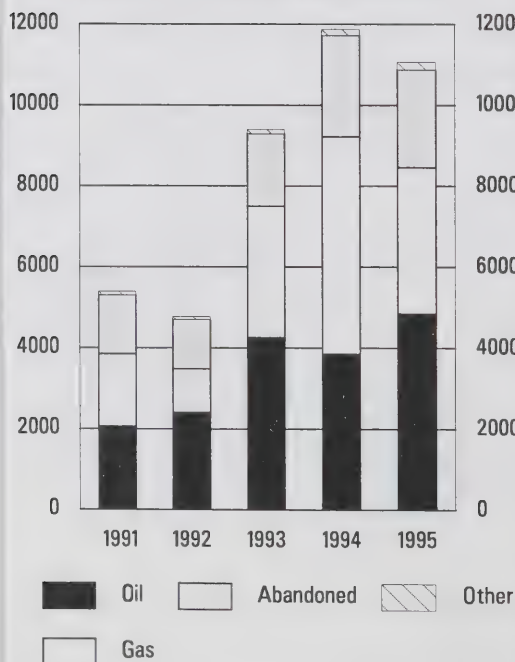
In the frontier regions, the awarding of exploration licences is done on the basis of competitive bids which are related to anticipated expenditures. In the Northwest Territories, exploration bids totalling \$4.4 million were accepted by INAC for 163 889 hectares (404 806 acres) in two parcels in the Mackenzie Valley region. In the eastern frontier regions, two exploration licences comprising 31 924 hectares (78 852 acres), based on bids of \$95.75 million were issued in the Jeanne D'Arc area offshore of Newfoundland. One licence was issued by the **Canada-Nova Scotia Offshore Petroleum Board**, based on expenditure commitment of \$86 million for 74 206 hectares (183 289 acres), in the Sable Island region of offshore Nova Scotia.

The average number of active drilling rigs per week in Canada decreased from 333 in 1994 to 279 in 1995, and the rig utilization rate showed a corresponding decrease from 74 percent to 62 percent. A total of 11 062 well completions, including dry

holes, were recorded in 1995, approaching the 1994 total of 11 870 wells. Approximately 45 percent of all wells drilled in 1994 were completed as gas wells and 33 percent were completed as oil wells. In 1995 the emphasis changed from gas to oil, with oil completions accounting for 44 percent of total wells drilled and gas wells accounting for about 33 percent. Oil targeted drilling was especially prevalent in development wells, where it accounted for 55 percent of completions. The emphasis in exploration drilling remained on gas which accounted for 39 percent, oil 20 percent and dry holes 41 percent of exploration wells. This activity was mainly within the conventional oil and gas area of western Canada, which comprises the sedimentary basin in British Columbia, Alberta, Saskatchewan and Manitoba.

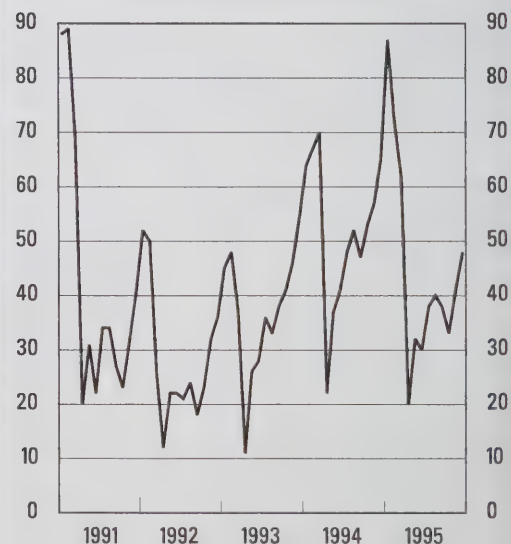
Geophysical activity during 1995 was lower than in 1994, measured by the number of active crews. The average number of active crews per month decreased from 52 in 1994 to 45 in 1995. Despite the overall decline in geophysical activity, both Saskatchewan and British Columbia experienced

Figure 3 – Canadian Wells Drilled



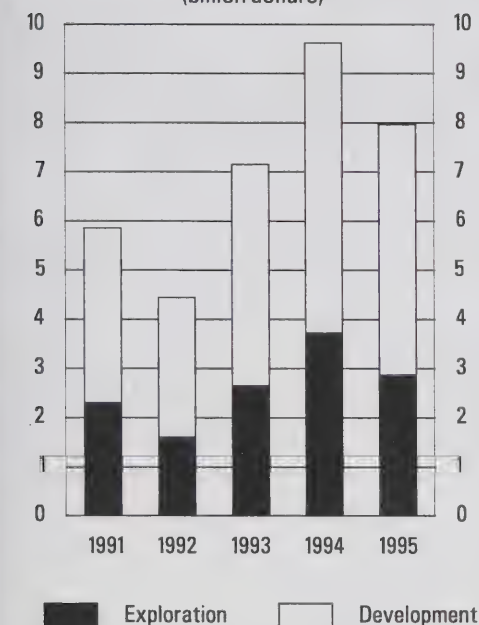
Source: Nickle's Daily Oil Bulletin

Figure 4 – Geophysical Activity
(active crews per month)



Source: Oilweek

Figure 5 – Exploration and Development Expenditures in Conventional Areas
(billion dollars)



Source: Oilweek

Figure 6 – West Texas Intermediate Cushing and North Sea Brent
(US\$ per barrel)



Source: NRCan

higher levels in 1995. Additionally, eight geophysical programs were conducted in the frontier regions.

Exploration and development expenditures in conventional areas during 1995 are estimated to be \$8.0 billion compared with \$9.6 billion spent in 1994. Expenditures in the frontier regions increased from \$12.8 million in 1994 to \$38.3 million in 1995.

OIL

INTERNATIONAL MARKETS

Prices for West Texas Intermediate (WTI) and North Sea Brent (Brent) crude oils started 1995 on a rising trend, peaking in April at \$US 19.83 and \$18.66 per barrel, respectively. These prices were the highest in two years. Subsequently, prices began to decline despite a number of potential supporting factors: frequent refinery shutdowns in the Gulf of Mexico due to numerous storms; 16-year lows for U.S. crude supplies; and, continuation of the

Organization of Petroleum Exporting Countries' (OPEC) production ceiling. For 1995, WTI and Brent averaged \$US 18.39 and \$US 17.04, respectively, about seven percent higher than the 1994 averages.

Total world crude oil production and demand in 1995 are estimated to have been 11.1 million cubic metres (70.0 million barrels) per day, about two percent higher than in 1994.

CANADIAN OIL RESERVES

The Board's estimate of Canada's remaining established reserves of conventional crude oil, as of 31 December 1994, is 656.1 million cubic metres (4.1 billion barrels). This represents a decrease of about 4.7 percent, or 32.7 million cubic metres (206 million barrels) from the reserves remaining at year-end 1993. Additions to established reserves, comprised of new discoveries, extensions to existing

pools and revisions to estimates of reserves in existing pools, replaced 61 percent of conventional crude oil production in 1994. Additions to established reserves related to horizontal drilling contributed significantly to total additions in 1994.

Table 5 illustrates the trend of additions to established reserves relative to production of conventional crude oil from 1990 to 1994. On a cumulative basis, additions have replaced 87 percent of production during this period of time.

As to unconventional resources, total remaining established reserves of bitumen from deposits under active development, as of 31 December 1994, increased significantly from the year-end 1993 estimate of 457.6 million cubic metres (2.88 billion barrels) to 565.0 million cubic metres (3.56 billion barrels). This increase is the result of a major review of both surface-mineable and in-situ bitumen reserves by the AEUB in 1994. Surface-mineable reserves were re-evaluated based on a review of 80 percent of wells drilled in the surface-mineable area using cutoff criteria consistent with the in-situ areas. The in-situ reserves were calculated using more accurate mapping techniques and recovery factors which more adequately reflect current technology. As a result of the review, total initial established surface-mineable and in-situ bitumen reserves increased by 1.4 billion and 131.4 million cubic metres (8.8 billion and 827.8 million barrels) respectively. Total remaining estab-

lished bitumen reserves are now estimated to be 6.6 billion cubic metres (41.6 billion barrels) as of 31 December 1994.

Table 6 – Estimated Established Canadian Reserves of Crude Oil and Bitumen at 31 December 1994
(million cubic metres)

	Initial	Remaining
Conventional Crude Oil		
British Columbia	99.0	18.4
Alberta ^(a)	2 336.6	374.8
Saskatchewan	578.6	138.2
Manitoba	37.0	6.5
Ontario	13.2	2.0
Northwest Territories & Yukon		
Arctic Islands and		
Eastern Arctic Offshore ^(b)	0.4	0.0
Mainland Territories ^(c)	37.5	16.2
Nova Scotia ^(d)	4.9	2.0
Newfoundland ^(e)	98.0	98.0
Total		
Conventional Crude Oil	3 205.2	656.1
Crude Bitumen^(f)		
Surface-mineable	644.0	398.8
In-situ	238.5	166.2
Total Crude Bitumen	882.5	565.0
Total (Conventional Oil & Bitumen)	4 087.7	1 221.1

(a) Source: AEUB and NEB

The estimate reserves for frontier areas comprise:

(b) for the Arctic Islands and Eastern Arctic Offshore - the Bent Horn field

(c) for the Mainland Territories - the Norman Wells field

(d) for Nova Scotia - the Cohasset and Panuke fields

(e) for Newfoundland - the Hibernia field

(f) Source: AEUB, Report ST95-18 (based on developed projects only)

Table 5 – Canadian Conventional Crude Oil Reserves Additions and Production
(million cubic metres)

	Additions	Production
1990	52	70
1991	59	71
1992	76	72
1993	83	75
1994	47	78
Total	317	366

CRUDE OIL AND PETROLEUM PRODUCTS

CANADIAN CRUDE OIL AND EQUIVALENT PRODUCTION

Canadian production of crude oil and equivalent averaged 312 257 cubic metres (2.0 million barrels) per day in 1995, an increase of about 3.5 percent over the 1994 level. The high level of drilling activity in 1994 and 1995, especially horizontal drilling, was the main contributor to increased productive capacity in the Western Canada Sedimentary Basin. Additional capacity created on the trunk pipelines in 1995 enabled the higher production levels to reach the market. Supply from eastern Canada decreased by about four percent due to declining production from the Cohasset-Panuke project.

The production of conventional light crude oil amounted to about 145 882 cubic metres (919 100

barrels) per day in 1995, approximately 1.8 percent lower than in 1994. Synthetic crude oil production from the **Syncrude Canada Ltd.** and the **Suncor Inc.** integrated mining plants in northeast Alberta averaged 43 329 cubic metres (273 000 barrels) per day in 1995, about 4.1 percent higher than in 1994. The increase is attributed to improvements in efficiencies mainly at the Syncrude plant which increased its output by 2 000 cubic metres (12 700 barrels) per day. The largest increase in any crude oil category was in the production of heavy crude oil and bitumen, which averaged 97 002 cubic metres (611 100 barrels) per day in 1995, an increase of approximately 11.6 percent over 1994. Pentanes plus production averaged 26 045 cubic metres (164 100 barrels) per day, 5.8 percent more than in 1994, mainly due to increased natural gas production in 1995.

Table 7 – Canadian Production of Crude Oil and Equivalent
(thousand cubic metres per day)

	1994	1995 ^(a)
Light Crude Oil and Equivalent		
Western Canada		
Conventional Light Crude Oil	144.1	141.6
Synthetic Crude Oil	41.6	43.3
Pentanes Plus	24.6	26.0
Eastern Canada	4.4	4.3
Total Light	214.8	215.3
Heavy Crude Oil and Bitumen		
Conventional Heavy Crude Oil	65.7	73.5
Bitumen	21.2	23.5
Total Heavy	86.9	97.0
Total Crude Oil	301.7	312.3

(a) Estimates

CRUDE OIL IMPORTS

In 1995, crude oil imports were down six percent to 93 100 cubic metres (586 500 barrels) per day and represented almost 40 percent of total refinery feedstock requirements in Canada. Additional pipeline capacity from western Canada to Ontario came on stream in 1995 and accounts for most of the decline in crude oil imports. Regionally, the Atlantic region imported almost 95 percent of its crude oil requirements while Quebec imported approximately 96 percent, down from 97 percent in 1994. Ontario continued to import a small quantity of crude oil, primarily from the U.S. and the North Sea. Other regions did not import crude oil during 1995.

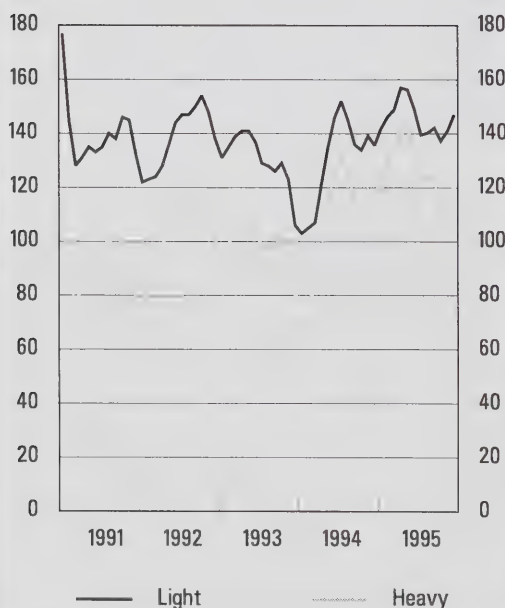
North Sea crude comprised 51 percent of total imports. Crude originating from **OPEC** countries represented 39 percent, down from 42 percent in 1994. Imports from other sources accounted for 10 percent, up from six percent in 1994.

CRUDE OIL EXPORTS

Total crude oil exports, including pentanes plus and synthetic crude, were 167 000 cubic metres (1 052 100 barrels) per day, up seven percent from 1994. The 1995 total comprised about 86 000 cubic metres (541 800 barrels) per day of light crude oil and equivalent and approximately 81 000 cubic metres (510 300 barrels) per day of blended heavy crude oil.

The estimated value of crude oil exports in 1995 was \$8.3 billion, compared with \$6.9 billion in 1994. Higher revenues resulted from increased volumes and strength in crude oil prices. In 1995, the estimated average light and heavy crude oil export price was \$145.60 and \$126.10 per cubic metre (\$23.10 and \$20.00 per barrel), respectively, compared to the 1994 light and heavy crude oil export price of \$129.90 and \$108.20 per cubic metre (\$20.60 and \$17.75 per barrel), respectively.

Figure 7 – Light and Heavy Crude Oil Export Prices
(C\$ per cubic metre)



The U.S. Midwest continued to be Canada's most important market followed by Montana and Washington. Smaller volumes were shipped from the east coast to the U.S. Gulf Coast. The largest export buyers of light crude oil in 1995 were, in order of rank, **Ashland Oil Inc., Shell Oil Company, Mobil Oil Corporation, Sun Company Inc., Amoco Oil Co., Clark Oil and Refining Company** and **United Refining Company**. For heavy crude oil, the largest foreign buyers were **Koch Refining Company, Amoco, Mobil** and **Conoco Inc.**

OIL REFINING

In 1995, the demand for petroleum products in Canada averaged 230 100 cubic metres (1 449 600 barrels) per day, an increase of one percent from 1994. Refinery production decreased by less than one percent.

Refinery receipts of domestic crude oil averaged 146 800 cubic metres (924 800 barrels) per day, a decrease of less than one percent from 1994.

Table 8 – Canadian Crude Oil and Equivalent Supply and Disposition
(thousand cubic metres per day)

	1994	1995 ^(a)	Percent change ^(c)
Production	301.7	312.3	3.5
Imports ^(b)	98.9	93.1	(5.9)
Total Supply^(c)	400.6	406.4	1.4
Domestic Use ^(b)	245.3	240.2	(2.1)
Exports	157.1	167.0	6.3
Total Disposition^(c)	402.4	407.2	1.2

(a) Estimates

(b) Source: Statistics Canada, Catalogue 45-004 Monthly

(c) The difference between total supply and total disposition is due to inventory changes and statistical adjustments

Figure 8 – Canadian Crude Oil and Equivalent Supply and Disposition 1995
(thousand cubic metres per day)



- (a) Norman Wells
- (b) Bent Horn
- (c) Cohasset, Panuke

Domestic crude oil refined in Canada	146.5
Domestic crude oil exported from Canada	167.0

Imported crude oil refined in Canada	93.1
of which:	
North Sea	47.9
Western Hemisphere	11.9
Middle East	12.4
Other	20.9

MAIN PETROLEUM PRODUCT IMPORTS

Imports of main petroleum products in 1995 averaged 14 400 cubic metres (90 700 barrels) per day, a gain of seven percent from the previous year. Imports of middle distillates and heavy fuel oil grew, while receipts of motor gasoline decreased.

MAIN PETROLEUM PRODUCT EXPORTS

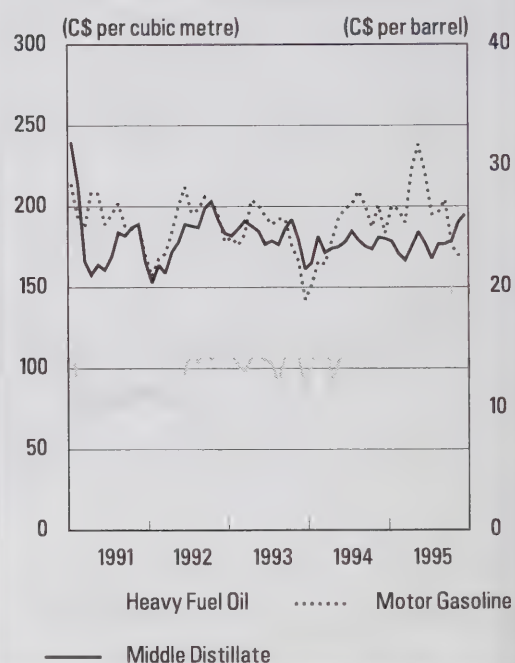
In 1995, exports of main petroleum products and partially processed oil grew by two percent to 32 500 cubic metres (204 800 barrels) per day. This reflects a rise in shipments of motor gasoline and middle distillates.

The estimated revenue from main petroleum product exports, including partially processed oil, was \$1.7 billion in 1995, about the same as 1994. This revenue excludes product exports from crude oil processing agreements for which prices are not assigned.

The U.S. continued to be the largest buyer of petroleum products, receiving almost 95 percent of total exports. Exports were also made to the Far East and Europe. The U.S. East Coast was the largest market, followed by the Midwest. The largest exporters of main petroleum products were, in rank

order, Irving Oil Limited, North Atlantic Refining Ltd., Ultramar Canada Inc., Imperial Oil and Olco Petroleum Group Inc.

**Figure 9 – Main Petroleum Products
Average F.O.B. Export Price**



**Table 9 – Canadian Main Petroleum
Product Exports, 1995^(a)**
(thousand cubic metres per day)

	Motor Gasoline	Middle Distillates	Aviation Turbine Fuel	Heavy Fuel Oil	Partially Processed Oil	Total ^(b)
Atlantic	10.71	11.37	0.21	1.90	0.60	24.80
Quebec	0.21	1.71	--	1.07	0.15	3.14
Ontario	0.44	1.04	--	0.47	0	1.95
Prairies	0.44	1.19	--	0.14	0	1.77
British Columbia	0.11	0.29	--	0.23	0.18	0.81
Total	11.90	15.60	0.21	3.81	0.93	32.46

(a) Estimates

(b) Excludes propane, butanes, lubricants, greases and asphalt

-- Negligible

OIL PIPELINE CAPACITY

During 1995, the Edmonton-Sarnia portion of **Interprovincial Pipe Line Inc.**'s system operated at capacity. In January 1995, the company completed an expansion of its system by increasing capacity by 27 100 cubic metres (170 000 barrels) per day. In spite of the expansion, **Interprovincial's** capacity was inadequate to meet the demand of producers to ship oil to the Chicago market. This resulted in apportionment on the system for most of the year.

Trans Mountain Pipe Line Company Ltd. completed an expansion of its system in 1995 which increased capacity by 6 000 cubic metres (37 700 barrels) per day. The **Trans Mountain** system operated at or close to capacity during the year, resulting in increased throughput for 1995.

NATURAL GAS

CANADIAN NATURAL GAS RESERVES

The Board's estimate of remaining established reserves of marketable natural gas as of 31 December 1994 is 1 812 billion cubic metres (64.2 trillion cubic feet), a decrease of 3.4 percent from 1993.

The decrease in remaining established reserves in 1994 is the result of production exceeding net reserves

additions. Although high levels of gas directed drilling in 1994 substantially increased additions to gas reserves from new discoveries, revisions to reserves estimates for existing gas pools, the larger component of net additions, remained approximately the same as in 1993. At the same time, gas production increased significantly in 1994. As a result, net reserves additions replaced only 57 percent of the natural gas produced in 1994. Examination of reserves replacement data for one year only can be misleading. A clearer impression of trends can be gained by examining production and additions over a longer period of time. Thus, over the period 1990-1994 inclusive, reserves additions have replaced 84 percent of cumulative production.

Higher production levels are now achieved with lower reserve inventories and presumably with improved economic efficiency suggesting that, historically, production was at rates below the productive capacity of reserves. The comparison of inventory to production is often expressed as the ratio of remaining reserves to annual production (RR/P). Over the last five years, decreases in remaining reserves have contributed somewhat to the decreasing RR/P ratios, but the acceleration of production has had a greater impact on this decline. Table 11 provides details of production, reserves additions, remaining reserves and RR/P ratios from 1990 to 1994.

It should be noted that approximately 21 billion cubic metres (0.7 trillion cubic feet) of marketable natural gas reserves were removed from the reserves category in 1994, as a result of the Board's *Unconnected Gas Supply Study – Phase I*. This study of unconnected reserves is continuing and analysis to date indicates that additional reductions to the reserves estimates will result from this work.

NATURAL GAS PRODUCTION

Marketable natural gas production in Canada for 1995 is estimated to have been 149.6 billion cubic metres (5.3 trillion cubic feet), surpassing the previous record level set in 1994 by 5.2 percent. Alberta

Table 10 – Estimated Established Reserves of Canadian Marketable Natural Gas at 31 December 1994
(billion cubic metres)

	Initial	Remaining
British Columbia	505	222
Alberta ^(a)	3 550	1 491
Saskatchewan	173	87
Ontario	41	8
Northwest Territories & South Yukon Territory	15	4
Total	4 284	1 812

(a) Source: AEUB and NEB

Table 11 – Canadian Marketable Natural Gas Reserves Additions, Production, Remaining Reserves and RR/P Ratios (Conventional Areas)
(billion cubic metres)

	Net Additions	Production ^(a)	Remaining Reserves	RR/P (years)
1990	136	102	1953	19.1
1991	116	108	1969	18.2
1992	67	120	1 911	15.9
1993	107	131	1876	14.3
1994	81	142	1812	12.8
Total	507	603		

(a) Production figures in this table are volumes measured in the year in question. In many reserves documents annual production figures are estimated using differences in cumulative production. These two estimates may be different because corrections to cumulative production are only applied to the current year's figure even though in some cases they should also be applied to cumulative production figures for previous years

accounts for about 83 percent of production, while British Columbia contributes 11 percent. By far the largest proportionate increase occurred in British Columbia where production grew by 18 percent over the 1994 level.

DOMESTIC NATURAL GAS SALES

Domestic natural gas sales are estimated to be 63.9 billion cubic metres (2.3 trillion cubic feet), an increase of 2.4 percent over 1994.

NATURAL GAS IMPORTS

Imports of natural gas totalled 0.8 billion cubic metres (28 billion cubic feet), a decrease of 33 percent from 1994. The imports are relatively small compared to the import capability. However, this capability is viewed by the Canadian market as a

valuable tool for supply diversification and is used when market opportunities arise.

NATURAL GAS EXPORTS

Natural gas exports to the U.S. increased by about 10 percent in 1995, to 79.3 billion cubic metres (2.8 trillion cubic feet). Gas exports accounted for 53 percent of total Canadian gas production, an increase of three percent over 1994. However, a decline in prices caused total natural gas export revenues to decrease by about 11 percent, to \$5.7 billion in 1995.

Natural gas exports to the U.S. were regionally distributed as follows: 35 percent to the Central Region; 27 percent to California; 23 percent to the Northeast; 14 percent to the Pacific Northwest; and one percent to the Mountain Region. The largest exporters of natural gas were, in order of rank, **TransCanada Gas Services Limited** (formerly **Western Gas Marketing Limited**)/**TransCanada PipeLines Limited**, **Pan-Alberta Gas Ltd.**, **ProGas**

Table 12 – Canadian Natural Gas Supply and Disposition
(billion cubic metres)

	1994	1995 ^(a)	Percent Change ^(a)
Production	142.2	149.6	5.2
Imports	1.2	0.8	-33.3
Total Supply	143.4	150.4	4.9
Domestic Use ^(b)	62.4	63.9	2.4
Exports	71.7	79.3	10.6
Other Uses ^(c)	9.3	7.2	-22.6
Total Disposition	143.4	150.4	4.9

(a) Estimates

(b) Source: Statistics Canada

(c) Other uses include pipeline fuel and losses, reprocessing, shrinkage and fuel, and net storage inventory change

Figure 10 – Canadian Natural Gas Supply and Disposition 1995
(billion cubic metres)



Domestic gas used in Canada 70.3
Domestic gas exported 79.3
Gas Imports 0.8

Major Export Points

- (H) Huntingdon
- (K) Kingsgate
- (M) Monchy
- (E) Emerson
- (N) Niagara Falls
- (I) Iroquois

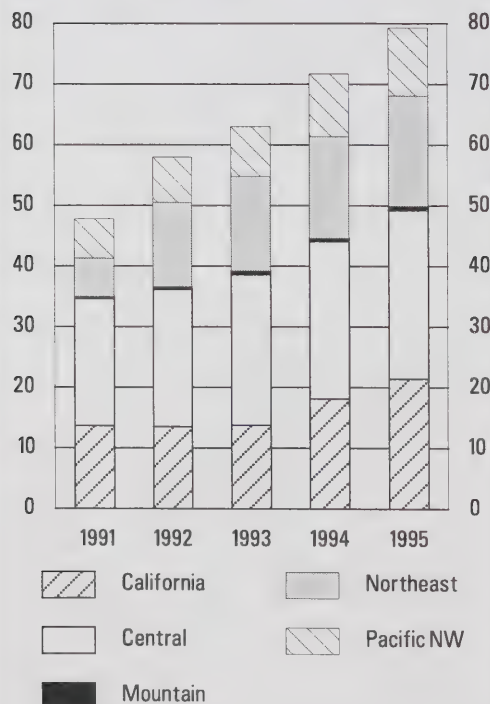
Limited, Pacific Gas and Electric Company, and Westcoast Gas Services Inc.

Increased exports to California and the central or midwest areas of the U.S. accounted for 67 percent of the overall growth. In 1995, the Canadian share of the U.S. natural gas market was 13 percent of consumption.

Sales of natural gas exported under short-term orders, which are valid for a period of up to two years, increased to 41.2 billion cubic metres (1 456 billion cubic feet) in 1995, three percent more than in 1994. They accounted for 52 percent of total natural gas exports in 1995, compared with 49 percent in 1994.

The balance of natural gas exports occurred under long-term licences, which may have a term of up to 25 years, although licences issued in recent years have generally had terms of not more than 15 years.

Figure 11 – Natural Gas Exports by Region
(billion cubic metres)

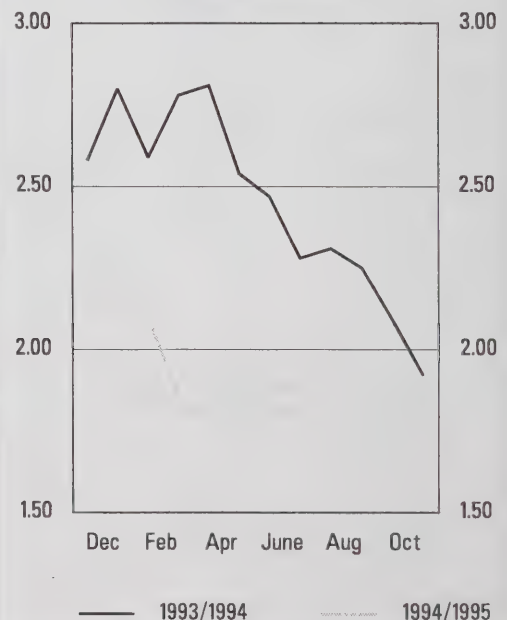


NATURAL GAS EXPORT PRICES

During 1995, North American natural gas prices continued to trend downwards from the prices of a year ago. This reflects intense gas-on-gas price competition which began early in the year with a lacklustre heating season across most of North America. Ample natural gas supply and abundant inventories of gas in storage prevailed through most of the year. Increasing use of storage has substantially reduced the seasonal price differentials, creating relatively more stable natural gas prices. The impact of the price dampening on Canadian dollar export revenues was only slightly mitigated by a decline in the Canadian dollar relative to the U.S. dollar. In 1995, Canadian export prices averaged \$1.90 per gigajoule at the international border, compared to \$2.36 in 1994.

The average cash price for spot natural gas over the year at the Henry Hub, Louisiana was \$US 1.69 per thousand cubic feet, which was \$US 0.23 per

Figure 12 – Natural Gas Average Export Prices
(C\$ per gigajoule)



thousand cubic feet or 12 percent lower than in 1994. Although the trend in Henry Hub prices is representative of trends in the eastern U.S. market, and is therefore an important indicator of the potential direction of Canadian export prices, there is a wide and variable differential between Henry Hub spot prices and spot prices quoted in western U.S. basins and at Empress, Alberta. The differentials in 1995 reflected changes in regional supply/demand situations over the year in part the result of pipeline capacity constraints between eastern and western North American markets. The differential between Empress and the Henry Hub was estimated to be \$US 0.80 per thousand cubic feet (\$1.10 per thousand cubic feet in Canadian values) in 1995.

NATURAL GAS PIPELINE CAPACITY

The increase in 1995 gas exports required high load factors on export pipelines. Any significant future growth in exports will require pipeline capacity expansion.

By year-end, the four largest interprovincial and international gas transmission systems, owned by **Alberta Natural Gas Company Ltd**, **Foothills Pipe Lines Ltd.**, **TransCanada PipeLines Limited** and **Westcoast Energy Inc.**, had a combined delivery capacity of approximately 350 million cubic metres (12.2 billion cubic feet) per day. This is about six percent more than in 1994. This increase is largely attributable to capacity additions that went into service during the year on **TransCanada** and **Westcoast's** pipelines. About 230 million cubic metres (8.1 billion cubic feet) per day of the combined delivered capacity was available for export service.

NATURAL GAS LIQUIDS (EXCLUDING PENTANES PLUS)

Production of natural gas liquids from gas plants and refineries in 1995 is estimated to have been 84 900 cubic metres (534 900 barrels) per day. Ethane production was 31 600 cubic metres (199 100

barrels) per day, up two percent; propane was 32 600 cubic metres (205 380 barrels) per day, an increase of 11 percent; and the production of butanes was 20 700 cubic metres (130 400 barrels) per day, a gain of four percent.

Exports of natural gas liquids during 1995 were 28 500 cubic metres (179 600 barrels) per day, a 15 percent increase over 1994, reflecting increased supply. Ethane exports were 3 100 cubic metres (19 500 barrels) per day, propane exports were 18 800 cubic metres (118 500 barrels) per day and butanes exports were 6 600 cubic metres (41 600 barrels) per day. During 1995, exports of ethane decreased by 23 percent from 1994, which reflects greater domestic use, presumably as a result of favourable market conditions for ethane derivatives production. Exports of propane and butanes increased by 24 and 16 percent, respectively, which again is a result of increased supply.

The U.S. Midwest continued to be Canada's largest market for propane and butanes, receiving almost 79 percent of the total export volume. Smaller amounts were delivered to the U.S. East Coast and

Table 13 – Canadian Natural Gas Liquids Supply and Disposition^(a)
(thousand cubic metres per day)

	1994	1995 ^(b)	Percent Change ^(b)
Production	80.6	84.9	5.3
Imports	0.9	1.1	22.2
Total Supply^(a)	81.5	86.0	5.5
Domestic Use	54.6	57.9	6.0
Exports	24.9	28.5	14.5
Total Disposition^(a)	79.4	86.4	8.8

(a) Includes ethane, propane and butanes

(b) Estimates

(c) The difference between total supply and total disposition is due to inventory changes and other adjustments

West Coast. The largest exporters of propane were, in order of rank, **Amoco Canada Petroleum Company Ltd., Kinetic Resources (LPG), Imperial Gas Liquids and Petro-Canada Hydrocarbons Inc.**, while the major exporters of butanes were **Amoco, Kinetic, Petro-Canada** and **NGL Supply Co. Ltd.**

The estimated value of natural gas liquids exports in 1995 was \$1.1 billion, compared with \$840 million in 1994. The increase in revenues is a result of higher export volumes coupled with stronger prices.

ELECTRICITY

CANADIAN ELECTRICITY GENERATING CAPACITY

In 1995, Canada's net generating capacity is estimated to have been 113 terawatts, an increase of about 0.5 percent over 1994.

ELECTRICITY GENERATION AND CONSUMPTION

Total net generation of electricity in 1995 is estimated to have been 544 terawatt hours, up one percent from 1994. Of Canada's total generation, approximately 62 percent was from hydroelectric generation, 21 percent from conventional thermal generation and 17 percent from nuclear generation. Total Canadian consumption in 1995 is estimated to be 507 terawatt hours, a two percent increase over 1994 (Table 14).

ELECTRICITY EXPORTS

Export sales during 1995 continued strongly compared with the early 1990's due mainly to continued demand in the U.S. markets combined with high water levels behind Canadian dams. However, total export sales of 40.5 terawatt hours were down 10 percent from 1994, with an associated revenue decrease to \$1.2 billion, or 11 percent. Firm and interruptible sales decreased seven and 11 percent, respectively. The average price for firm

exports rose slightly from \$35.65 per megawatt hour in 1994 to \$36.40 per megawatt hour in 1995. The interruptible price fell from \$25.69 per megawatt hour to \$24.17 per megawatt hour in 1995.

New Brunswick Power's firm exports decreased 84 percent while interruptible export sales increased 87 percent. Continued demand in the Northeast U.S. market led to a four percent increase in firm sales and a three percent decrease in interruptible exports over 1994 by **Hydro-Québec**. **Ontario Hydro's** firm exports accounted for less than one percent of its total export sales. Although **Ontario Hydro's** interruptible exports fell by 28 percent, it continued to export much more than in the late 1980's and early 1990's. **Manitoba Hydro's** firm export sales decreased by 17 percent mainly due to lower seasonal diversity sales. Interruptible export sales by **Manitoba Hydro** rose by 28 percent. **B.C. Hydro's** total export sales fell by 57 percent mainly due to high water levels on the U.S. side of the border and a highly competitive market. **B.C. Hydro's** interruptible sales fell by 82 percent and firm sales fell by 23 percent compared to 1994.

Hydro power still remains the leading source of production for all exports of electricity as its share

Table 14 – Canadian Electricity Supply and Disposition
(terawatt hours)

	1994	1995 ^(a)	Percent Change ^(a)
Production ^(a)	539.8	544.1	0.9
Imports	0.9	2.5	175
Total Supply	540.7	547.1	1.0
Domestic Use	495.9	506.6	2.0
Exports	44.8	40.5	-10.0
Total Disposition	540.7	547.1	1.0

(a) Estimates

(b) Source: Statistics Canada

increased to 71 percent from 68 percent in 1994. Coal generated exports decreased to 17 percent from 19 percent in 1994. Other fuels used to produce electricity for export included: nuclear at two percent, down from five percent; oil at three percent; and other (unassignable – generally from one province to another where the source of generation is unknown) at seven percent.

New York State was the biggest single U.S. importer with about 22 percent, while the New England states accounted for about 36 percent of exports.

ELECTRICITY IMPORTS

Imports increased to 2.5 terawatt hours during 1995 from 0.9 terawatt hours in 1994.

Figure 13 – Average Export Price of Electricity Exports
(C\$ per megawatt hour)

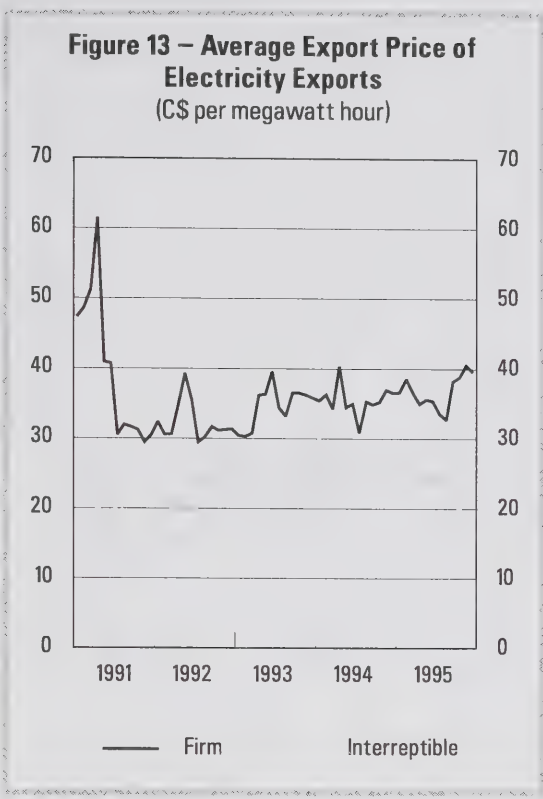


Figure 14 – International and Interprovincial Transfers of Electricity
(gigawatt hours)



Data for interprovincial transfers of electricity are from 1 November 1994 to 31 October 1995 and are compiled from Statistics Canada Electric Power Statistics Monthly.

Data for United States imports and exports are for 1995 (excludes exchanges) and are compiled by the NEB.

Board Activities

HEARINGS, REVIEWS AND APPEALS

HEARINGS

For certain applications, the Board holds either oral or written public hearings. Oral hearings are held anywhere in Canada where sufficient local interest exists in the application in question. In 1995, the Board held oral hearings in Vancouver and Fort St. John, British Columbia, Calgary, Alberta and Ottawa and Sarnia, Ontario. Details of the public hearings conducted in 1995 are set out below.

Pipeline Facilities

GH-4-94/Foothills Pipe Lines (Alta.) Ltd. – Following a hearing held in October 1994, the Board approved an application from **Foothills** to construct a 215-kilometre natural gas pipeline between Princess, Alberta and the Alberta/Montana border near Wild Horse, at an estimated cost of \$139 million.

GH-5-94/Westcoast Energy Inc. – For reasons of jurisdiction, the Board dismissed an application by **Westcoast** relating to the expansion of the Fort St. John, British Columbia natural gas gathering system and the construction of a new gas processing plant at Aitken Creek, at an estimated cost of \$398 million. A hearing on the application was held in February and March.

GH-2-95/Westcoast Energy Inc. – Following a hearing held in June, the Board approved an application by **Westcoast** to construct four loops on its natural gas pipeline system in British Columbia, at an estimated cost of \$107.3 million.

OHW-1-95/ISH Energy Ltd. – In September, the Board issued a certificate to **ISH Energy** to construct and operate 95 kilometres of oil pipeline extending from northeastern British Columbia to Alberta and to construct pumping and metering equipment and other associated facilities at an estimated cost of \$14.5 million. The Board held a written hearing on the application.

GH-3-95/TransCanada PipeLines Limited – In November, the Board approved an application by

TransCanada for the construction of 296 kilometres of natural gas pipeline and the installation of compression facilities in 1996 and 1997 at an estimated cost of \$489 million. A hearing on the application was held in October.

GHW-1-95/PanCanadian Petroleum Limited – In June, at the request of **PanCanadian**, the Board adjourned *sine die* a written hearing it was conducting on an application by **PanCanadian** to construct a 14.5-kilometre natural gas pipeline between Ontario and Quebec under the Ottawa River at an estimated cost of \$8.4 million.

OHW-2-95/Interprovincial Pipe Line Inc. and Westspur Pipe Line Company Inc. – At year end the Board was conducting a written hearing on complementary applications from **Interprovincial** and **Westspur** to expand their pipeline systems. **Interprovincial** applied to construct pumping and associated facilities and to construct two new tanks at its existing terminal locations in Hardisty, Alberta and Cromer, Manitoba at an estimated cost of \$86 million. **Westspur** applied to construct 33.4 kilometres of pipeline from its Steelman terminal in Saskatchewan to the international border near North Portal, Saskatchewan and pumping unit additions and modifications to existing facilities at its Steelman pump station at an estimated cost of \$5.2 million.

Traffic, Tolls and Tariffs

RH-2-94/Cost Of Capital – Following a hearing in 1994, the Board decided in March on the cost of capital (rate of return on common equity and capital structure) for an indefinite period for six of the ten Group 1 pipeline companies. The 1995 rate of return on common equity was set at 12.25 percent. The Board also established an automatic adjustment mechanism to make yearly adjustments to the approved rates of return on common equity.

In December, the Board established the 1996 rate of return on common equity at 11.25 percent for

the affected companies based on this adjustment mechanism.

RH-4-94/Interprovincial Pipe Line Inc. – In March, the Board approved a negotiated settlement between Interprovincial and the **Canadian Association of Petroleum Producers** respecting an incentive toll methodology and associated tolls and tariffs. The agreed-upon methodology will form the basis for calculating **Interprovincial's** revenue requirement for an indefinite period and parameters have been established to calculate the revenue requirement and the resulting tolls for 1995 to 1999, inclusive.

This was the first negotiated toll settlement placed before the Board featuring incentive elements, whereby the pipeline and toll payers share the benefits associated with cost savings achieved by the pipeline. It also includes a process for sharing the benefits associated with higher than anticipated throughput. The Board has also agreed to resolve disputes which may arise under the settlement, on a case-by-case basis.

RH-3-94/TransCanada PipeLines Limited – The Board held a hearing on **TransCanada's** toll application in January. In March, the Board approved a net revenue requirement for **TransCanada** of \$1.75 billion for 1995.

RHW-1-94/Trans Québec & Maritimes Pipeline Inc. – In April, the Board approved a 1995 net revenue requirement for **TQM** of \$63.6 million. The Board considered the application by way of written hearing.

MH-1-95/Interprovincial Pipe Line Inc. – During the first four months of 1995, the volumes of oil nominated for shipment on **Interprovincial's** system far exceeded the pipeline's capacity. Following a hearing in April, the Board required a financial penalty to be imposed for non-performance in respect of nominations and a force majeure clause covering specific events. As a result, nominated volumes for a time approximated the pipeline's capacity. However, in the fall, nominations again rose sharply and nominated volumes had to be apportioned down to match

the available capacity. In December, 13 shippers on **Interprovincial's** pipeline requested the Board to implement the use of historical throughputs to determine allocation. The Board received numerous letters of comment from other shippers and interested parties. The Board subsequently decided to implement this proposal for January and February 1996. At the same time, it directed **Interprovincial** to file a report by 22 January 1996 providing recommendations for a long-term solution to apportionment.

RH-5-94/Westcoast Energy Inc. – The Board held a hearing on **Westcoast's** toll application in April and May. In July, the Board approved final tolls for **Westcoast** for 1995. The Board approved a revenue requirement for 1995 of \$448 million.

RH-1-95/Foothills Pipe Lines Ltd. – Following a hearing in September, the Board authorized **Foothills** in October to drawdown the balance of deferred income taxes over a period of 10 years starting 1 January 1996. The Board also determined that the existing operating arrangements for Zones 6 to 9 continued to be cost efficient.

RH-2-95/TransCanada PipeLines Limited – In December the Board issued its decision on Phase 1 of the hearing, which had been held earlier in the month. The Board approved a number of toll and tariff resolutions which had been resolved by the 1996 Tolls Task Force, a revised "suite of services" which is used to calculate the Firm Service Tendered Differential and interim tolls to be effective 1 January 1996.

In December, **TransCanada** filed an *Incentive Cost Recovery and Revenue Sharing Settlement* which applies to the determination of **TransCanada's** net revenue requirement and resulting tolls for the years 1996 - 1999 inclusive. At year-end the Board was seeking the views of parties on the procedure to be followed in respect of the settlement and on whether any issues other than the settlement, remain to be decided in Phase 2.

RH-3-95/Trans Mountain Pipe Line Company Ltd. – In November, the Board held a hearing on an

application for tolls design and toll that **Trans Mountain** may charge for 1995 and 1996. At the request of the company, matters concerning the determination of 1995 and 1996 cost of service were adjourned *sine die* pending the anticipated completion of a negotiated settlement between the company and its principal shippers and the **Canadian Association of Petroleum Producers**.

Gas Exports

GH-1-95/Brooklyn Navy Yard Cogeneration Partners, L.P. and Renaissance Energy Ltd. – The Board held a hearing in May and June to consider these applications. In July, the Board amended an existing licence issued to **Brooklyn Navy Yard** by extending the term of the licence by five years and increasing the term volume by 1 370.0 million cubic metres (48.5 billion cubic feet). The Board also issued a nine-year licence to **Renaissance** to export some 79 300 cubic metres (2.8 million cubic feet) of natural gas per day.

GH-4-95/Various Gas Exports – In November, the Board held a hearing on five applications to export some 8.1 billion cubic metres (289.8 billion cubic feet) of natural gas. A decision on the applications was expected in January 1996.

PUBLIC INQUIRY

In August, the Board announced, because it was seriously concerned about the increased incidence of Stress Corrosion Cracking (SCC), that it was commencing a wide-ranging public inquiry on the occurrence of SCC on Canadian oil and gas pipelines. SCC involves a complex process which can result in the formation of cracks on the surface of a buried pipeline. In severe cases, the pipeline can fail if the cracking goes undetected for several years. There have been seven pipeline failures on **TransCanada PipeLines Limited's** system attributed to SCC since 1985.

The inquiry is ongoing and the Board is gathering information on the status of research on SCC and the experience of pipeline companies and other regulatory agencies both within Canada and elsewhere. The Board met with several communities in October to discuss public concerns. The Board will hold an oral public hearing in Calgary beginning 15 April 1996.

REVIEWS

In January, **Mouvement au Courant** applied for a review of the Board's Reasons for Decision of December 1994 granting approval to **Hydro-Québec** to export firm and interruptible electricity. On 9 February, the Board dismissed the application.

In January, **Rocky Mountain Ecosystem Coalition** applied for a review of the Board's decisions in nine previous hearings on applications for natural gas export licences. The Board dismissed the application on 9 February.

In July, **The Consumers' Gas Company Ltd.** and **Union Gas Limited** applied for a review of the Board's decision regarding **TransCanada PipeLines Limited's** 1995 tolls. On 31 July, the Board dismissed the application.

In July, the Board decided to review, on its own motion, its Reasons for Decision regarding **Westcoast Energy Inc.'s** 1995 tolls (RH-5-94), once it became clear that certain projects that **Westcoast** had intended to complete in 1995 had been omitted. The Board amended its decision to include the projects approved in GH-2-95 in the 1995 rate base.

In December, **Ashland Scurlock Permian Canada, Ltd.** and **Ashland Inc.** applied for a review of the Board's decision in December to approve a proposal whereby apportionment on **Interprovincial Pipe Line Inc.'s** pipeline, for the months of January and February 1996, would be based on historical shipments.

APPEALS

Manitoba Hydro v. National Energy Board

The **Federal Court of Appeal** has been asked to overturn the operating conditions for certain **Manitoba Hydro** facilities which were required by the Board in an Amending Order dated 19 November 1992. Pursuant to an application brought by **Manitoba Hydro**, leave to appeal was granted 22 February 1993. The case has yet to be heard.

Rocky Mountain Ecosystem Coalition v. National Energy Board

In December 1994 the **Rocky Mountain Ecosystem Coalition** filed an application for leave to appeal the November 1994 decision of the Board granting natural gas export licences to the applicants. In March, the **Federal Court of Appeal** dismissed the application for leave to appeal.

The Grand Council of the Crees (of Quebec) and the Cree Regional Authority v. Hydro-Québec and the National Energy Board

In January, the **Grand Council** and the **Cree Authority** filed for leave to appeal the Board's decision released on 7 December 1994 regarding an export application by **Hydro-Québec**. In March, the **Federal Court of Appeal** dismissed the application for leave to appeal.

Westcoast Energy Inc. v. the National Energy Board and the Attorney General of Canada; and Reference by the National Energy Board (Westcoast Energy Inc. – Grizzly Valley Project)

In June, **Westcoast** filed for leave to appeal the Board's decision dismissing, for reasons of jurisdiction, an application by **Westcoast** relating to the expansion of the company's Fort St. John natural gas gathering system and the construction of a new gas treatment plant at Aitken Creek. In August, the **Federal Court of Appeal** granted leave to appeal.

In September, the Board referred to the **Federal Court of Appeal** an application from **Westcoast** for

the proposed expansion of the company's Pine River Plant and Grizzly Valley Raw Gas Transmission System in northeastern British Columbia. The proposed expansion also includes the Sukunka Fuel Gas Pipeline, a loop of the Pine River Mainline and modifications to Compressor Station No. 2.

Westcoast had asked the Board to seek a ruling at the earliest possible time from the **Federal Court of Appeal**, on whether the Board has jurisdiction to hear the Grizzly Valley expansion project application.

The **Westcoast** appeal and the Board's Reference are scheduled to be heard concurrently on 8 January 1996.

Applications for judicial review of the order of the Board granting the reference and applications for leave to appeal that order were filed by **B.C. Gas Utility Ltd.** and the **Province of British Columbia**. These applications were scheduled to be heard by the **Federal Court of Appeal** on 8 January 1996.

West Moberly Lake First Nations v. the National Energy Board

In July, **West Moberly Lake First Nations** filed for leave to appeal the Board's decision authorizing **Westcoast Energy Inc.** to add four loops to its Mainline. In October, the **Federal Court of Appeal** dismissed the application.

In December, the **West Moberly First Nations** filed an application for leave to appeal the decision of the Board with the **Supreme Court of Canada**. That application remained pending at the end of the year.

The Consumers' Gas Company Ltd. – Niagara Gas Transmission Ltd. Facilities Application

In October, **Consumers' Gas** applied to the **Federal Court of Appeal** for leave to appeal the Board's decision that it had jurisdiction over the company's Ottawa East line once it was connected to the proposed **Niagara** line. Leave to appeal is granted in November. The appeal is scheduled to be heard on 12 March 1996.

NON-HEARING, MONITORING AND RESEARCH

PIPELINE FACILITIES

In 1995, the Board approved the construction of approximately 700 kilometres (434 miles) of natural gas pipeline, 150 kilometres (93 miles) of oil pipeline, and a variety of additional pipeline facilities. The estimated total cost of the natural gas and oil pipeline construction was \$975 million and \$17.5 million, respectively. Further information on certificates and orders issued during 1995 is available in the Appendices.

PIPELINE SAFETY

In 1995, there were 80 incidents reported under the Board's *Onshore Pipeline Regulations*. Of these 80 incidents, three were caused by defective welds, 10 by human error, 13 by corrosion, 26 by material failure, and 28 by other miscellaneous causes such as natural forces and improperly installed pipeline components. The Board conducted field investigations into four of these pipeline incidents which included two gas pipeline ruptures and two oil pipeline breaks. There were eight injuries and no fatalities related to oil and gas pipeline incidents. All injuries were to workers engaged in pipeline activities.

The number of incidents reported to the Board each year varies as a result of several factors. The increase in the number of incidents reported since 1992 is largely attributable to greater awareness by some pipeline companies of the regulatory reporting requirements. This has resulted in a larger number of minor incidents being reported. Nonetheless, the Board is concerned with the increasing number of incidents and continues to examine closely the information obtained from its investigation of all incidents, to identify and act on any trends indicative of systemic safety concerns.

The Board periodically issues safety advisories and follows up on recommendations made by the

Transportation Safety Board of Canada in its reports on incidents. Furthermore, the Board is presently conducting a public inquiry on SCC on Canadian oil and gas pipelines. SCC accounted for two pipeline failures in 1995.

In 1995, the Board completed operations safety audits of 17 companies. These audits were conducted at the companies' headquarters and regional offices to review procedures and records and to verify compliance with the requirements of the *Onshore Pipeline Regulations*. The Board examined operations and maintenance manuals, emergency response manuals, safety training programs, operations and maintenance records and assessed safety-related operations issues with company personnel. The Board also visited selected facilities to confirm that operating procedures were in compliance with those set out in the company's manuals.

The Board inspected the facilities of 11 pipeline companies including five of **Westcoast Energy Inc.**'s gas plants. At major facilities such as

Table 15 – Types of Pipeline Incidents – 1991-1995

Years	1991	1992	1993	1994	1995
Liquid pipelines					
Substance ^(a) release					
and/or ignition	7	10	11	13	20
Others	10	7	12	10	12
Subtotal	17	17	23	23	32
Gas pipelines					
Substance ^(a) release					
and/or ignition	15	11	19	18	13
Others	17	20	23	27	35
Subtotal	32	31	42	45	48
Total	49	48	65	69	80

(a) Oil, gas or toxic substance (Onshore Pipeline Regulations section 60)

meter/pump/compressor stations or tank farms, the Board checks pipeline facilities as well as company's operations records to verify compliance with the requirements of the *Onshore Pipeline Regulations*.

The Board also inspected pipeline construction of seven companies including **Trans Quebec & Maritimes Pipelines Inc.**'s St. Lawrence River tunnel, **Westcoast Energy Inc.**'s mainline looping, and **TransCanada PipeLines Limited's** mainline looping and compressor station addition. At the construction sites, the Board monitored the company's compliance with regulatory requirements and approvals.

In addition, the Board audited the public awareness programs and pipeline crossing records of 11 companies. The Board held meetings with the field personnel of pipeline companies and contractors to discuss: compliance with the *Pipeline Crossing Regulations*; public awareness requirements; and, to follow up on violations of the regulations.

See Figures 15 and 16, on pages 33 and 34, for gas and oil pipelines regulated by the Board.

FINANCIAL REGULATION OF PIPELINES

During 1995, the Board rendered decisions on three toll applications, approved an aggregate cost of service of \$2.67 billion compared with an applied-for amount of \$2.68 billion, as well as approving one negotiated settlement.

The Board conducted a number of financial regulatory audits of pipeline companies in 1995 as part of its surveillance responsibility. Where applicable, these audits included an examination of issues raised in recent toll proceedings such as the companies' regard for economy and efficiency and the adequacy of cost allocation. Audit reports were released in 1995 for the following companies: **Champion Pipeline Corporation Limited**, **Montreal Pipeline Ltd.**, federally-regulated pipelines operated by **Murphy Oil Company Ltd.** (**Bodo Pipeline System**, **Fort Pitt**, **Manito Pipelines Ltd.**,

Milk River Pipeline System and **Wascana Pipe Line Ltd.**), **Pouce Coupé Pipe Line**, **TransCanada PipeLines Limited.**, **Trans-Northern Pipelines Inc.**, **Trans Quebec & Maritimes Pipelines Inc.** and **Westspur Pipe Line Inc.**

NATURAL GAS, OIL AND ELECTRICITY

During the year the Board issued 120 short-term orders authorizing the export of natural gas for periods of up to two years.

The Board issued 131 short-term orders for the export of crude oil and petroleum products, 57 for the export of propane and 48 for the export of butanes. No orders were issued for the export of ethane.

The Board also issued 19 permits authorizing the export of over 26 000 gigawatt hours of electricity for periods of up to 30 years. Some of the export permits issued were, for the first time, to energy marketers who have neither generation nor transmission facilities. The Board also issued one permit authorizing the construction of an international power line.

ENVIRONMENTAL MATTERS

The Board is responsible for environmental issues relating to the regulation of gas and oil pipelines, energy exports, international power lines, and frontier oil and gas activities.

The Board ensures that projects receive appropriate levels of environmental assessment, in accordance with the CEA Act before irrevocable regulatory decisions are made, and that such assessments are carried out in a coordinated manner. The Board also ensures, as a "responsible authority" under the CEA Act, that environmental screenings or comprehensive studies are conducted, an ongoing public registry of all documents relevant to the assessment of projects is maintained, and the need for follow-up programs is considered for all projects under its jurisdiction, according to standards prescribed by the legislation. In 1995, the Board carried out environmental assessments of more than 150 projects. These included

assessments of pipeline facilities applications, research and development activities, energy export applications, and frontier drilling programs, development plans, seismic and geological programs.

The Board conducts environmental surveillance programs to ensure that regulated companies protect the environment during the construction, operation, maintenance, and abandonment of their facilities and that they restore any lands which are disturbed. The Board verifies compliance with each company's corporate environmental protection procedures and with the Board's requirements. In addition, the Board responds to landowner complaints relating to land rights matters and to environmental concerns arising as a result of construction or operation of pipeline facilities. In 1995, the Board conducted 127 environmental inspections related to various pipeline projects, and 20 investigations related to environmental concerns raised by landowners.

The Board updated its database of PCB-contaminated material storage facilities. Eight companies had indicated that they had such material in storage.

The Board examined environmental issues which may impact on its regulatory responsibilities and was involved with federal-provincial and industry-government committees which undertook projects to examine issues and regulations related to atmospheric emissions, waste treatment, river crossings and underground storage tanks.

The Board provided advice on the development of other regulations under the CEA Act, and initiated the review and update of environmental guidelines related to the COGO Act.

The Board ensures that all companies under its jurisdiction have adequate emergency response plans to deal with and reduce or mitigate any negative effects to personnel safety, public health and the environment resulting from an oil spill or natural gas leak. The Board works closely with the responsible company and other government agencies to monitor and control the situation during emergencies. Where applicable, the Board may assume management of the

response operations. In 1995, the Board conducted 20 environmental inspections relating to incidents, emergency response situations and exercises.

FRONTIER LANDS – OIL AND GAS

The Board regulates frontier activities to enhance worker safety, protect the environment and conserve oil and gas resources.

Operations

Oil and gas production operations continued at the Norman Wells, Bent Horn and Pointed Mountain fields in the Northwest Territories and the Kotaneelee field in the Yukon Territory. During 1995, the Board approved applications as follows: 21 for renewal of suspended well status; 19 for abandonment of wells; eight to run seismic surveys; five to conduct geological exploration; one drilling program for nine development wells in the Norman Wells field and approval for four of the wells in the program; and, one diving program. In addition to the above, seven approvals related to field operations were issued and 28 wells were inspected in the Yukon.

At the request of the **Canada-Nova Scotia Offshore Petroleum Board**, the Board carried out an inspection of the meteorological and oceanographic forecasting, measurement, and observing programs in support of the LASMO Cohasset-Panuke (now **PanCanadian Petroleum Ltd.**) production project.

Safety

The Board conducted 10 inspections of drilling and production facilities at Norman Wells, Cameron Hills, Fort Liard and Pointed Mountain fields in the Northwest Territories, and Kotaneelee fields in the Yukon Territory to ensure compliance with the COGO Act and the *Canada Oil and Gas Production and Conservation Regulations*.

There were no lost time accidents reported during the past year related to oil and gas activities on frontier lands.

Advice

The Board provides technical advice to: **INAC** regarding operational constraints and environmental requirements to be included in exploration permits; the Frontier Lands Management Branch of **NRCan**; and to the two offshore petroleum boards in the areas of developing regulations, offshore oil and gas development, safety and environment.

The Board also provided technical assistance to **INAC** and **NRCan** in order to advance the implementation phase of an accord with the **Yukon Territory Government**. The Board consulted with the **Yukon Territory Government** regarding the provision of technical services once the accord has been implemented.

RESEARCH

Environmental Studies Research Funds (ESRF)

ESRF finances a research program that sponsors pertinent environmental and social studies that will, in due course, assist government decision-making related to oil and gas exploration and development on Canada's frontier lands. Funding for ESRF is provided by levies on frontier land interests held by oil and gas companies. Board staff serve as ESRF chairman, program administrators, project managers, and scientific authorities and, as well, provide financial accountability to the Ministers of **INAC** and **NRCan** for the levies collected and spent on their behalf. The ESRF administration is presently completing a program of six studies which were initiated over the past five years. No new studies have been supported for 1995. Six reports were published in 1995 and two more are scheduled to be published by mid-1996.

Program of Energy Research and Development (PERD)

PERD funds scientific and technological programs investigating aspects of exploration, production, transportation, and use of energy. To ensure a sound knowledge basis for its regulatory and environmental assessment functions, the Board presently manages some \$2 million of research funds. Within the various PERD committees, the Board undertakes a variety of roles including initiating, promoting, and managing projects, participating and chairing committees, developing research and development strategies and priorities, and providing secretariat functions.

Under a new structure of PERD, which will take effect beginning in the fiscal year 1996/97, more emphasis will be placed on energy efficiency, renewable energy, and the energy-related issues of climate change and greenhouse gas emissions. Although there will be a reduced emphasis on fossil fuels overall, more focus will be given to health, safety, and environmental issues of energy production and use.

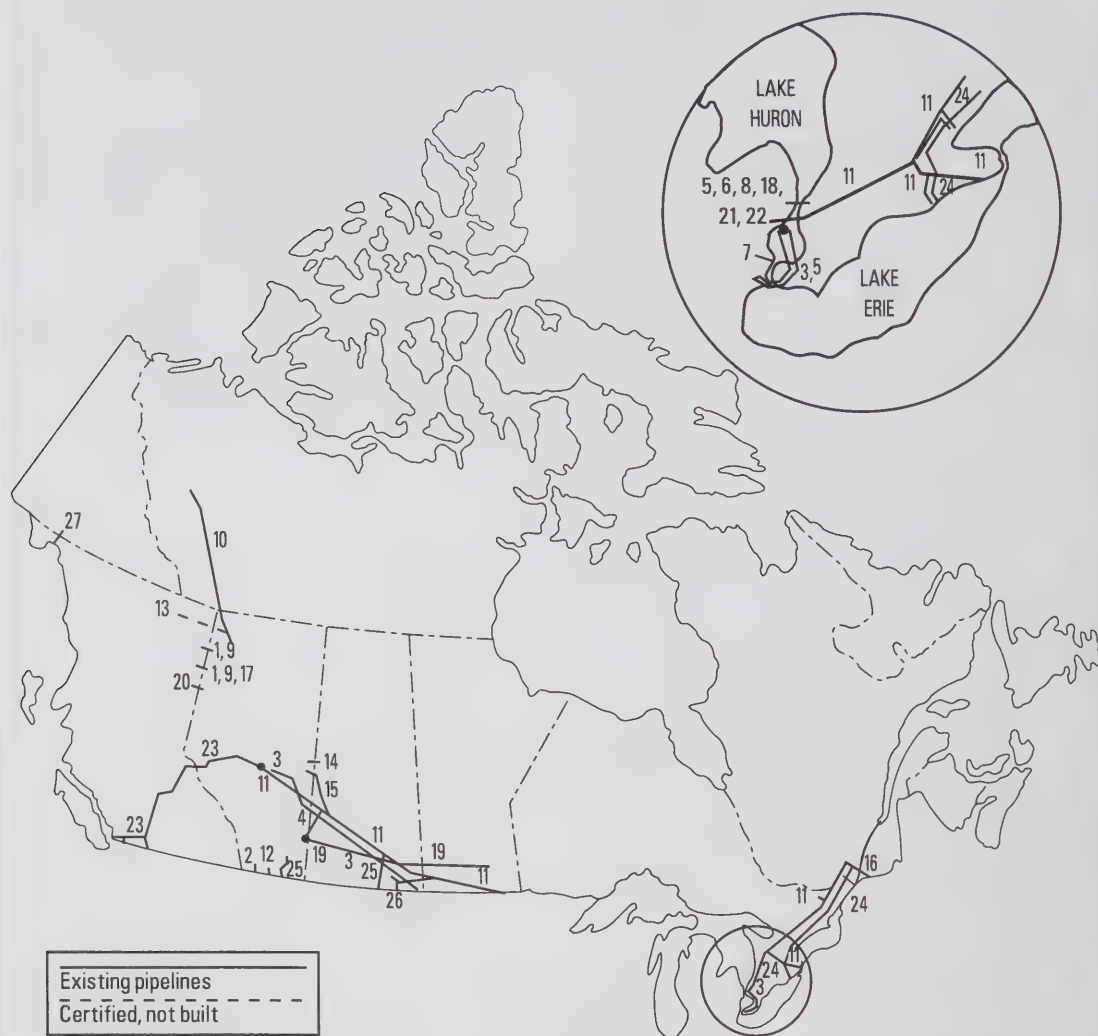
Project areas where the Board takes a leadership role include ice-structure interaction, structural engineering, evacuation technologies, environmental forecasting and design, marine and pipeline transportation of oil and gas, climate change issues, groundwater and soil remediation and oil extraction technologies. In response to the re-oriented PERD the Board will increase its efforts in the following areas: pipeline reliability; risk analysis and management; personnel safety; air emissions and quality; and groundwater and soil remediation.

Figure 15 – Gas Pipeline Companies Regulated by the National Energy Board



- | | | |
|--|---|---|
| 1. Alberta Natural Gas Company Ltd | 15. Huntingdon International Pipeline Corporation | 29. Remington Energy Ltd. |
| 2. Amerada Hess Canada Ltd. | 16. Neutrino Resources Inc. | 30. Revenue Canada - Customs and Excise |
| 3. Amoco Canada Petroleum Company Ltd. | 17. Many Islands Pipe Lines (Canada) Limited | 31. SCL Quebec Pipeline Inc. |
| 4. Amoco Canada Resources Limited | 18. Mid-Continent Pipelines Limited | 32. St. Clair Pipelines Ltd. |
| 5. Blue Range Resource Corporation | 19. Minell Pipeline Ltd. | 33. Talisman Energy Inc. |
| 6. Fletcher Challenge Petroleum Inc. | 20. Morgan Hydrocarbons Inc. | 34. TransCanada PipeLines Limited |
| 7. Canadian Hunter Exploration Ltd. | 21. Murphy Oil Company Ltd. | 35. Trans Québec & Maritimes Pipelines Inc. |
| 8. Canadian-Montana Pipe Line Company | 22. Niagara Gas Transmission Limited | 36. Union Gas Limited |
| 9. Centra Transmission Holdings Inc. | 23. Novacorp International Pipelines Ltd. (not built) | 37. Wascana Pipe Line Ltd. |
| 10. Champion Pipe Line Corporation Limited | 24. Novagas Clearinghouse Pipelines Ltd. | 38. Westcoast Energy Inc. |
| 11. Chief Mountain Gas Co-op Ltd. | 25. Peace River Transmission Company Limited | 39. 167496 Canada Ltd. |
| 12. Consumers' Gas (Canada) Ltd. | 26. Petrorep Resources Ltd. | 40. Northrock Resources Ltd. |
| 13. ELAN Energy Inc. | 27. Poco Petroleums Ltd. | 41. Cube Energy Corp. |
| 14. Foothills Pipe Lines Ltd. | 28. Portal Municipal Gas Company Canada Inc. | 42. Husky Oil Operations Ltd. |

Figure 16 – Oil Pipeline Companies Regulated by the National Energy Board



- | | | |
|--|--|---|
| 1. Amoco Canada Petroleum Company Ltd. | 9. Imperial Oil Resources | 20. Pouce Coupe Pipe Line Ltd. |
| 2. Aurora Pipe Line Company | 10. Interprovincial Pipe Line (NW) Ltd. | 21. SCL Pipeline Inc. |
| 3. Cochin Pipe Lines Ltd. | 11. Interprovincial Pipe Line Inc. | 22. Sun Pipe Line Company |
| 4. Dome Kerrobert Pipeline Ltd. and Pan Canadian Kerrobert Pipeline Ltd. | 12. Inverness Petroleum Limited | 23. Trans Mountain Pipe Line Company Ltd. |
| 5. Dome NGL Pipeline Ltd. | 13. ISH Energy Ltd. | 24. Trans-Northern Pipelines Inc. |
| 6. Dome NGL Pipeline Ltd. and Amoco Canada Petroleum Company Ltd. | 14. Joint Ventures of the Bi-Provincial Upgrader | 25. Wascana Pipe Line Ltd. |
| 7. Ethane Shippers Joint Venture | 15. Manito Pipelines Ltd. | 26. Westspur Pipe Line Company Inc. |
| 8. Genesis Pipeline Canada Ltd. | 16. Montreal Pipe Line Limited | 27. Yukon Pipelines Limited |
| | 17. Morrison Petroleums Ltd. | |
| | 18. Novacor Chemicals (Canada) Ltd. | |
| | 19. Petroleum Transmission Company | |

STUDIES AND REPORTS

The Board periodically conducts studies and prepares reports in support of its regulatory responsibilities. In 1995, the Board published the reports described below.

NATURAL GAS MARKET ASSESSMENT – PRICE CONVERGENCE IN NORTH AMERICAN NATURAL GAS MARKETS

As part of its Market-Based Procedure to regulate the export of natural gas, the Board, from time to time, publishes reports on the workings and the state of the natural gas industry and markets. This particular Natural Gas Market Assessment study, released in December, contained a statistical analysis of price links between various natural gas producing basins in North America. By assessing the strength of the price links between basins, conclusions can be made about whether natural gas is priced in a single “continental” market or whether pricing takes place in segmented regional markets. The strength of such links is important from a Canadian perspective to the extent that natural gas supply/demand developments in other parts of North America may influence natural gas prices in Canada.

Major conclusions of the study were: (1) there has been a general increase in the strength of price links between producing regions since the inception of gas industry deregulation; (2) there is, however, somewhat of a pricing split between eastern and western gas markets; and, (3) the pricing of Alberta gas appears to be more strongly linked with western gas markets than with eastern gas markets. Overall, the study provided statistical evidence for industry perceptions of an east-west split in gas pricing. In addition, the growing strength of price links, in general, indicated that natural gas markets have become more competitive thereby diminishing the likelihood that one, or a few market players, could unduly influence prices.

DRAFT REPORT: UNCONNECTED GAS SUPPLY STUDY – PHASE 1: EVALUATION OF UNCONNECTED RESERVES IN ALBERTA

As part of its responsibilities under Parts III and VI of the NEB Act, the Board analyzes the supply of natural gas. Phase I of this study analyzes the characteristics and economic viability of a portion of the unconnected gas in Alberta. This study, has two components: first, an examination of the 59 largest unconnected pools (500 million cubic metres Initial Marketable Reserves) in Alberta; and second, a thorough investigation of all unconnected pools (2 514 pools) in a selected area in central Alberta. Results from the Board’s analysis indicated that 25 percent of the reserves in the largest unconnected pools should not be considered as remaining established reserves due to economic considerations. Additionally, 46 percent of the unconnected remaining established reserves in the central Alberta area should not be considered as reserves, due largely to technical considerations.

The Board is continuing its studies of supply from unconnected gas wells in Alberta in conjunction with the AEUB and in British Columbia with the **Ministry of Energy, Mines and Petroleum Resources**.

REMAINING AUTHORIZED GAS EXPORTS UNDER LONG-TERM LICENCES AS OF 1 NOVEMBER 1995

As part of its ongoing gas export regulations and monitoring responsibilities, the Board released a statistical report in November showing that the total authorized volume of natural gas remaining to be exported under long-term licences is 521.0 billion cubic metres (18.4 trillion cubic feet). This quantity does not include licences authorizing the export of natural gas from the Mackenzie Delta totalling 260.0 billion cubic metres (9.2 trillion cubic feet).

Acts, Regulations, Rules and Guidelines

Below is a listing of Acts, Regulations, Rules and Guidelines under which the Board operates.

ACTS

National Energy Board Act
Canada Oil and Gas Operations Act
Canada Petroleum Resources Act
Canadian Environmental Assessment Act
Canada Labour Code Part II
Energy Administration Act
Northern Pipeline Act

REGULATIONS PURSUANT TO THE NATIONAL ENERGY BOARD ACT

Cost Recovery Regulations
Electricity Regulations
Export and Import Reporting Regulations
Gas Pipeline Uniform Accounting Regulations
Oil Product Designation Regulations
Oil Pipeline Uniform Accounting Regulations
Onshore Pipeline Regulations
Offshore Pipeline Regulations
Part VI (Oil and Gas) Regulations
Part VI Regulations, Electricity
Pipeline Crossing Regulations, Part I
Pipeline Crossing Regulations, Part II
Power Line Crossing Regulations
Substituted Service Regulations
Toll Information Regulations

REGULATIONS PURSUANT TO THE CANADA OIL AND GAS OPERATIONS ACT

Canada Oil and Gas Certificate of Fitness Regulations
Canada Oil and Gas Diving Regulations
Canada Oil and Gas Drilling Regulations
Canada Oil and Gas Installations Regulations
Canada Oil and Gas Geophysical Regulations

*Canada Oil and Gas Production and Conservation
Regulations*

Canada Oil and Gas Operation Regulations

Oil and Gas Spills and Debris Liability Regulations

REGULATIONS PURSUANT TO THE CANADIAN ENVIRONMENTAL ASSESSMENT ACT

Law List Regulations
Inclusion List Regulations
Comprehensive Study List Regulations
Exclusion List Regulations

RULES

Rules of Practice and Procedure
Pipeline Arbitration Committee Procedure Rules, 1986

GUIDELINES

Guidelines for Filing Requirements (22 February 1995). The Guidelines sets out the information to be provided by applicants for:

- Early public notification of projects
- Certificates for gas pipelines exceeding 40 kilometres
- Certificates for oil pipelines exceeding 40 kilometres
- Section 58 orders for gas pipelines under 40 kilometres or additions and upgrade to existing facilities
- Section 58 orders for oil pipelines under 40 kilometres or additions and upgrade to existing facilities
- Environmental, socio-economic and lands information for authorization to construct, operate and abandon pipelines

- Notices required when dealing with determination of detailed route and approval
- Leave to open orders for pipelines
- Orders fixing tolls and tariffs
- Quarterly surveillance reports to be filed by Group 1 companies
- Orders for export and import of gas.

Guidelines for Negotiated Settlements of Traffic, Tolls and Tariffs (23 August 1994)

Guidelines Respecting Physical Environmental Programs During Petroleum Drilling and Production Activities on Frontier Lands (April 1994)

Financial Regulatory Audit Policy of the National Energy Board (1 December 1994)

Memorandum of Guidance – Regulation of Group 2 Companies (6 December 1995)

Memorandum of Guidance – Retention of Accounting Records by Group 1 Companies Pursuant to Gas/Oil Uniform Accounting Regulations (30 November 1994)

Memorandum of Guidance to Interested Parties Concerning Full Implementation of the September 1988 Canadian Electricity Policy (7 July 1993)

Offshore Waste Treatment Guidelines, January 1989 (Revised Guidelines scheduled for issuance in 1996 and will include Guidelines for the Use of Oil-Based Drilling Muds (November 1985).)

Oil and Gas Occupational Safety and Health Guidance Notes (April 1992)

Section 58 Streamlining Initiative – Order XG/XO-100-94, Revision 1 (16 November 1996)

Memorandum of Guidance on National Energy Board Regulatory Procedures and Information Requirements for Applicants Filing for:

- A. Short-term Gas Export Orders; and,
- B. Long-term Gas Export Licences (14 November 1986, as amended)

Information and Publications

The Board regularly publishes a number of documents including monthly energy export statistics, long term supply and demand analysis, gas market studies, Reasons for Decisions on applications and environmental studies. These documents are described in an information bulletin entitled *The Board's Publications*.

To provide current information on ongoing activities, such as applications received, public hearings, decisions on applications, public consultations and changes to regulations and procedures, the Board regularly issues news releases which are available to the media and the public. There were 70 news releases issued in 1995. In addition, the Board publishes a quarterly *Regulatory Agenda* which provides detailed information on all its current regulatory and advisory activities.

The Board is also responsible for managing and disseminating the information it gathers while regulating oil and gas activities in northern Canada. The services provided to facilitate access to the frontier information are described in an information bulletin entitled *The Frontier Information Office*.

OBTAINING PUBLICATIONS

Any person wishing to receive Board documents should ask to be placed on any of the following "area of interest" mailing lists:

- L1: Everything the Board issues
- L4. Oil and gas matters
- L5. Electrical matters
- L6: Annual Report only
- L7: News Releases only
- L8: Regulatory Agenda only
- L9: Environmental matters

Many publications are also available in the Board's library. These include applications and submissions, transcripts of hearings, plus a variety of technical, legal, economic and energy studies. The

Library is open to the public from 9:00 to 16:00 on business days.

Certain documents are available to the public electronically by way of a Bulletin Board System and a Board Document System (see page 43).

For copies of any of the publications, contact:

Regulatory Support Office
311 Sixth Avenue S.W.
Calgary AB T2P 3H2
Telephone: (403) 292-4800
Telecopier: (403) 292-5503

MAJOR DOCUMENTS ISSUED IN 1995

REASONS FOR DECISION

Pipeline Facilities

Foothills Pipe Lines (Alta.) Ltd. – January 1995 - GH-4-94

Interprovincial Pipe Line Inc., Apportionment – April 1995 - MH-1-95

Westcoast Energy Inc. – May 1995 - GH-5-94

Westcoast Energy Inc. – June 1995 - GH-2-95

ISH Energy Ltd. – September 1995 - OHW-1-95

Niagara Gas Transmission Limited – Jurisdiction Question - September 1995

TransCanada PipeLines Limited – November 1995 - GH-3-95

Tolls

Cost of Capital – March 1995 - RH-2-94

TransCanada PipeLines Limited – March 1995 - RH-3-94

Trans Québec & Maritimes Pipeline Inc. – April 1995 - RHW-1-94

Interprovincial Pipe Line Inc. – April 1995 - MH-1-95

Westcoast Energy Inc. – July 1995 - RH-5-94

Foothills Pipe Lines Ltd. – October 1995 - RH-1-95

TransCanada PipeLines Limited – 28 December 1995 - RH-2-95

Gas Export

Various Gas Export – July 1995 - GH-1-95

Electricity

TransAlta Utilities Corporation – August 1995

Utility – Trade Corp. – November 1995

TransCanada Northridge Power Ltd. – November 1995

Destec Power Services Inc. – December 1995

Multi Energies Inc. – December 1995

REPORTS

Regulatory

Unconnected Gas Supply Study, Phase I – Evaluation of Unconnected Reserves in Alberta – January 1995

Secondary Market for Natural Gas Transportation Service – 2 February 1995

Revised Part VI Regulations and Export and Import Reporting Regulations – For comment – 24 February 1995

Rules of Practice and Procedure, 1995 - 17 May 1995

National Energy Board Part VI Regulations – 6 May 1995

Remaining Authorized Gas Exports Under Long-term Licences as of 1 November 1995 – November 1995

Natural Gas Market Assessment – Price Convergence in North American Natural Gas Markets – December 1995

Information

National Energy Board 1994 Annual Report – April 1995

Information for the Public – Geophysical/Geological Operations on Frontier Lands Regulated by the National Energy Board – February 1995

Information Bulletin No. 11 – The Frontier

Information Office – June 1995

Brochure – Board Document System

Environmental Studies Research Funds (ESRF)

ESRF 1994 Annual Report

ESRF – Report No. 125, Long-Range Ice Forecasting System Applied for the Beaufort Sea – May 1993 (printed in 1995)

ESRF – Report No. 127 – West Coast Newfoundland Oil Spill Sensitivity Atlas – March 1995

ESRF – Report No. 128 – East Coast Repetitive Seafloor Mapping 1979/1990 – March 1991 (printed in 1995)

ESRF – Report No. 130, Bibliography of Aquatic Oil Pollution Fate and Effects (CD Rom) – December 1994 (printed in 1995)

ESRF – Report No. 131 – Environmental Loading Studies for the Canadian Standard Association Offshore Structures Code – January 1995

ESRF – Report No. 132 – Remote Sensing Ice Detection Capabilities East Coast – April 1995

List of Companies

PIPELINE COMPANIES AND ELECTRIC POWER ENTITIES UNDER NATIONAL ENERGY BOARD JURISDICTION

The following is a list of the pipeline companies and electric power entities which own and/or operate interprovincial or international pipelines or power lines under the Board's jurisdiction. The pipeline companies have been divided into two groups. Group 1 consists of the ten major pipeline companies which are audited by the Board on a regular basis and whose operating results are continuously monitored by the Board. The 53 companies under the Board's jurisdiction that are not included in Group 1 have been designated as Group 2 companies.

GROUP 1 GAS

Alberta Natural Gas Company Ltd
Foothills Pipe Lines Ltd.
TransCanada PipeLines Limited
Trans Québec & Maritimes Pipeline Inc.
Westcoast Energy Inc.

GROUP 1 OIL AND PRODUCTS

Cochin Pipe Lines Ltd.
Interprovincial Pipe Line Inc.
Interprovincial Pipe Line (NW) Ltd.
Trans Mountain Pipe Line Company Ltd.
Trans-Northern Pipelines Inc.

GROUP 2 GAS

Amerada Hess Canada Ltd.
Amoco Canada Petroleum Company Ltd.
Blue Range Resource Corporation
Bow Valley Industries Ltd.
Canadian Hunter Exploration Ltd.
Canadian-Montana Pipe Line Company
Centra Transmission Holdings Inc.
Champion Pipe Line Corporation Limited
Chief Mountain Gas Co-op Ltd.
Consumers' Gas (Canada) Limited
Cube Energy Corp.

ELAN Energy Inc.
Fletcher Challenge Petroleum Inc.
Huntingdon International Pipeline Corporation
Husky Oil Operations Ltd.
Many Islands Pipe Lines (Canada) Limited
Mid-Continent Pipelines Limited
Minell Pipeline Ltd.
Morgan Hydrocarbons Inc.
Murphy Oil Company Ltd.
Neutrino Resources Inc.
Niagara Gas Transmission Limited
Northrock Resources Ltd.
Novacorp International (Canada) Ltd. (Not built)
Novagas Clearinghouse Pipelines Ltd.
Peace River Transmission Company Limited
Petrorep Resources Ltd.
Poco Petroleums Ltd.
Portal Municipal Gas Company Canada Inc.
Remington Energy Ltd.
Revenue Canada Customs and Excise
SCL Quebec Pipeline Inc.
St. Clair Pipelines Ltd.
Talisman Energy Inc.
Union Gas Limited
Wascana Pipe Line Ltd.
167496 Canada Ltd.

GROUP 2 OIL AND PRODUCTS

Amoco Canada Petroleum Company Ltd.
Aurora Pipe Line Company
Dome Kerrobert Pipeline Ltd. and Pan Canadian
Kerrobert Pipeline Ltd.
Dome NGL Pipeline Ltd.
Dome NGL Pipeline Ltd. and Amoco Canada
Petroleum Company Ltd.
Ethane Shippers Joint Venture
Genesis Pipeline Canada Ltd.
Imperial Oil Resources Limited
Inverness Petroleum Limited
ISH Energy Ltd.
Joint Ventures of the Bi-Provincial Upgrader

Manito Pipelines Ltd.
Montreal Pipe Line Limited
Morrison Petroleum Ltd.
Northwest Transmission Company Limited
Novacor Chemicals (Canada) Ltd.
Petroleum Transmission Company
Pouce Coupé Pipe Line Ltd.
SCL Pipeline Inc.
Sun Pipe Line Company
Wascana Pipe Line Ltd.
Westspur Pipe Line Company Inc.
Yukon Pipelines Limited

ELECTRIC POWER UTILITIES AND OTHERS

Boise Cascade Canada Ltd.
British Columbia Hydro and Power Authority
Canadian Niagara Power
Canadian Sandpoint Power Association
The Canadian Transit Company
Cedars Rapids Transmission Company Limited
Cominco Ltd.
Detroit and Canada Tunnel Corporation
Farms (Cottages, isolated loads)
Fraser Inc.
Hydro-Québec
Lac La Croix Power Authority
Maine and New Brunswick Power
Manitoba Hydro-Electric Board
James R. McMurrich
New Brunswick Electric Power Commission
Ontario Hydro
Roseau Electric Cooperative Inc.
Saskatchewan Power Corporation
St. Clair Tunnel Corp.
TransAlta Utilities Corporation
West Kootenay Power Ltd.

List of Appendices and Statistical Reports

APPENDIX A

- A1 Canadian Energy Consumption
- A2 Crude Oil and Equivalent Supply and Disposition
- A3 Natural Gas Supply and Disposition
- A4 Natural Gas Liquids Supply and Disposition
- A5 Electricity Generation and Disposition

APPENDIX B

- B1 Certificates Issued During 1995 Approving the Construction of New Oil Pipeline Facilities Exceeding 40 Kilometres in Length
- B2 Orders Issued During 1995 Approving Oil Pipeline Facilities Including Pipeline Construction Not Exceeding 40 Kilometres in Length
- B3 Exports of Canadian Crude Oil and Equivalent – 1994 and 1995
- B4 Exports of Canadian Crude Oil and Equivalent – 1991-1995
- B5 Exports of Petroleum Products – 1995
- B6 Exports of Petroleum Products – 1994 and 1995

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- C1 Certificates Issued During 1995 Approving the Construction of New Gas Pipeline Exceeding 40 Kilometres in Length
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- C3 Licences and Long-Term Orders to Export Natural Gas as at 31 December 1995
- C4 Licences and Long-Term Orders to Import Natural Gas as at 31 December 1995
- C5 Natural Gas Exports by Export Point – 1991-1995

- C6 Total Net Exports of Propane and Butanes – 1994-1995

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- D1 Certificates and Permits Issued During 1995 in Respect to International Power Lines
- D2 Amending Orders Issued During 1995 in Relation to International Power Lines
- D3 Licences Issued During 1995 Relating to the Export of Electricity
- D4 Permits and Orders Issued During 1995 Relating to the Export of Electricity
- D5 Electricity Exports 1995
- D6 Electricity Trade Between Canada and the United States (by Province)
- D7 Electricity Trade Between Canada and the United States (by American Region/State)

APPENDIX E

- E1 Financial Information – Group 1 Oil Pipeline Companies
- E2 Financial Information – Group 1 Gas Pipeline Companies

STATISTICAL REPORTS AVAILABLE

Crude Oil Supply, Disposition and Price Report – Monthly
 Crude Run Report – Weekly
 Electricity Exports and Imports – Monthly
 Estimated Supply of Canadian Crude Oil & Equivalent – Quarterly
 Exports of Petroleum Products – Monthly
 LPG Underground Inventories in Canada – Monthly
 Natural Gas Export and Imports – Monthly
 Propane and Butane Export Report – Monthly
 Western Canada Heavy and Light Crude Oil Availability – Quarterly

HOW TO OBTAIN COPIES OF APPENDICES AND STATISTICAL REPORTS ACCESS

Appendices listed above are available via the Board's electronic Bulletin Board System. There is no charge for access to selected Board documents via the electronic bulletin board. The only cost to users is the normal phone company charge for connecting to the Calgary number: (403) 299-2751. The bulletin board is available around the clock, with the exception of specified hours for data loading or occasional system upgrades. A help line at 299-3919 will be operational from 9:30 a.m. to 10:30 a.m. (MT) during most business days. A user guide with instructions is available for reference. Users should set their communications software to:

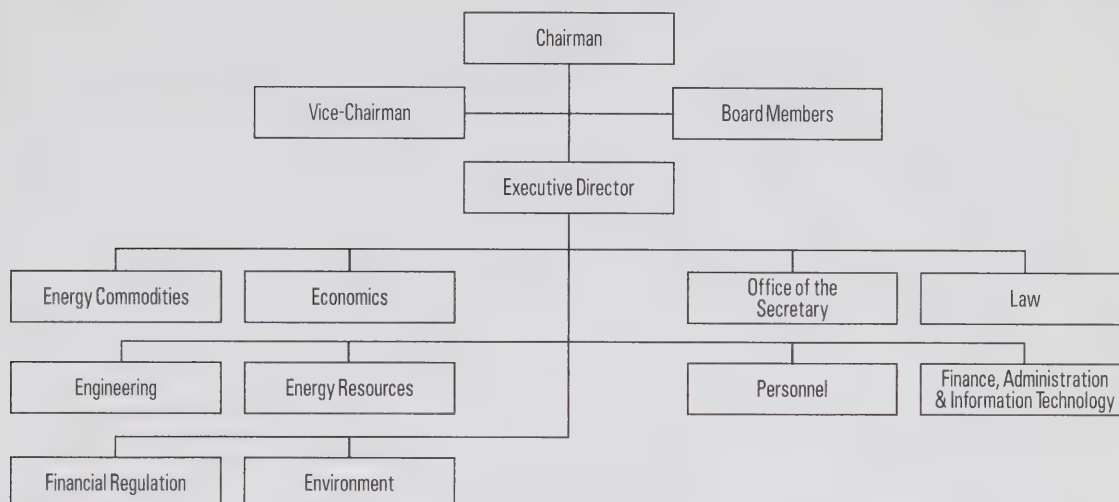
- 300, 1200, 2400, 9600, 14 400 or 16 800 bps;
- full duplex;
- no parity;
- eight data bits; and
- one stop bit.

The statistical reports listed above are available on hard copies only.

For a hard copy or diskette of the Appendices or a hard copy of the Statistical Reports contact:

Regulatory Support Office
311 - Sixth Avenue S.W.
Calgary AB T2P 3H2
Telephone: (403) 292-4800
Telecopier: (403) 299-5503

Organization as of 31 December 1995



BOARD MEMBERS

Roland Priddle	Chairman	Robert Andrew, Q.C.	Member
Kenneth Vollman ^(a)	Vice-Chairman	Judith Snider ^(b)	Temporary Member
Anita Côté-Verhaaf	Member	Glennis Lewis ^(c)	Temporary Member
Roy Illing	Member	Richard Revel ^(c)	Temporary Member

(a) On 3 February, Kenneth Vollman was appointed Vice-Chairman of the Board

(b) On 21 February, Judith Snider, Board General Counsel and Director of Law Branch, was appointed Temporary Member for six months and on 21 August she was re-appointed for a further six months

(c) On 28 September, Glennis Lewis and Richard Revel were appointed temporary members for a term of six months to review the Express Pipeline Project

SENIOR STAFF OF THE BOARD

Gaétan Caron	Executive Director
Scott Richardson	Secretary of the Board
Judith Snider	General Counsel
Judith Hanebury	Acting Director - Law Branch
Jim Thompson	Director - Personnel Branch
Brenda Kenny	Director - Finance, Administration and Information Technology Branch
John Hayward	Director - Economics Branch
Raymond Choy	Director - Energy Commodities Branch
Graham Campbell	Director - Energy Resources Branch
John McCarthy	Director - Engineering Branch
Ken Sato	Director - Environment Branch
Terrance Rochefort	Director - Financial Regulation Branch

Canada

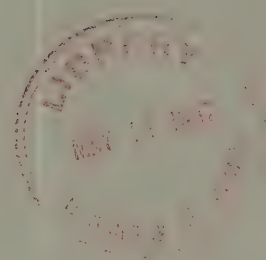
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Publications

1996

ANNUAL
REPORT

ATIONAL ENERGY BOARD



26 March 1997

The Honourable Anne A. McLellan, P.C., M.P.
Minister of Natural Resources Canada
Ottawa, Ontario

Dear Ms. McLellan:

I am pleased to submit the Annual Report of the National Energy Board for the year ending 31 December 1996, in accordance with the provisions of Section 133 of the *National Energy Board Act*, R.S.C 1985, c. N-7.

Yours sincerely,

A handwritten signature in dark ink, appearing to read 'R. Priddle', written in a cursive style.

R. Priddle
Chairman

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Ground Floor

Internet: <http://www.neb.gc.ca>

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Calgary (Alberta)
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*Our purpose is to make
decisions that are fair,
objective and respected*

Chairman's Letter

In a busy year for the Board, four activities stood out: negotiated settlements; pipeline safety; the process for dealing with environmental considerations associated with a new pipeline; and cooperation with other jurisdictions.

Our Board is a world leader in modern approaches to pipeline toll regulation. During the past several years, the Board has encouraged negotiated settlements, held a workshop on incentive regulation, and taken several initiatives to streamline its regulatory methods. These initiatives culminated in 1996 with an important negotiated settlement between Trans-Canada PipeLines Limited and its shippers. Along with previous settlements in 1995, this settlement should achieve important savings for natural gas and oil shippers. By the end of 1996, several major Board-regulated pipelines had entered into some kind of long-term negotiated settlement with incentive provisions.

Stress Corrosion Cracking has been a troubling safety issue of growing importance for Canadian oil and natural gas pipelines over the past ten years. Following an intensive inquiry involving a high degree of public participation, the Board adopted 27 recommendations to promote public safety on the country's oil and gas pipelines.

The Board approved construction of the Express Pipeline, the first large new oil pipeline out of western Canada in 45 years. Approval involved, first, careful scrutiny by a joint review panel of NEB and environmental experts appointed pursuant to the *Canadian Environmental Assessment Act*, which made 39 recommendations to address concerns associated with wildlife, the preservation of rare plants and other environmental issues. Second, the same panel, acting pursuant to the NEB Act, dealt with matters such as the novel market-based toll methodology proposed by Express PipeLine Ltd.

At mid-year, the Board entered into an agreement with five other parties, federal and provincial, for a joint public review of the proposed Sable Gas Projects, which include production of natural gas in the Sable Island area, processing and transportation to domestic and export markets. This cooperation will provide for a single, comprehensive and expeditious approach to the environmental, technical and economic assessments of the projects.

The developments I have highlighted reflect a transformation of the Board's regulatory practice to become more responsive to the needs of regulated entities, affected publics and other jurisdictions. The Board also embarked on a process of internal transformation, adapting its organizational structure from ten branches to five business units, with a view to better serving the needs of its publics with greater efficiency and long-term cost savings.

1997 is my last year as Chairman. The Board which I shall be leaving will be, as a result of this transformation, a dynamic, adaptable organization, well-equipped to serve the public interest in dealing with ongoing change in the Canadian energy sector. I wish to acknowledge Board staff and my fellow members for their ongoing dedication to excellence in 1996 and throughout my 12 years as Chairman.



R. Priddle

The NEB Today

The main regulatory responsibilities of the National Energy Board (the “Board” or the “NEB”) are defined in the *National Energy Board Act* (“NEB Act”) and the *Canada Oil and Gas Operations Act* (“COGO Act”). Its primary areas of responsibility pursuant to the NEB Act are:

- (i) approval of the construction, operation and abandonment of interprovincial and international oil, gas and commodity pipelines, international and designated interprovincial power lines;
- (ii) approval of tolls and tariffs for oil, gas and commodity pipelines;
- (iii) approval of the export of oil, gas and electricity, and the import of natural gas;
- (iv) ensuring the safe operation of pipeline facilities;
- (v) environmental protection during the construction, operation, maintenance and abandonment of pipelines and power lines; and
- (vi) provision of advice to the Minister of Natural Resources Canada (the “Minister”) on matters pertaining to the Board’s regulatory expertise, upon request from the Minister.

Under the terms of the COGO Act and certain provisions of the *Canada Petroleum Resources Act*, the Board regulates oil and gas exploration and production activities on Canada’s frontier lands that are not subject to federal/provincial accords. This includes the safety and environmental aspects of these activities. (A more complete description of the Board’s regulatory responsibilities and the relevant legislation is contained in Annex I.)

THE CHANGING REGULATORY ENVIRONMENT

Although the NEB Act has been altered little since the Board was created in 1959, the market environment in which the Board operates has changed dramatically. For example, in the ten years since price deregulation was introduced, natural gas exports have almost quadrupled, while estimates of the ultimate resource potential of the Western Canada Sedimentary Basin have increased by

nearly 50 percent. Recently, there has been a marked shift towards shorter-term sales in both domestic and export natural gas markets. Governments and the public appear to be satisfied with the operation of substantially unregulated markets for both natural gas and oil.

While commodity markets have worked well, oil and natural gas are transported by pipeline systems which hold dominant market positions and therefore require some regulation. Tolls on major pipelines have been increasingly determined through negotiated settlements between shippers and pipelines, as opposed to traditional cost-of-service regulation. The potential construction of new pipelines in the next few years raises the possibility of competition among pipeline companies and could result in further changes to regulatory approaches.

Recent federal environmental legislation, most notably the *Canadian Environmental Assessment Act* (“CEA Act”), has increased the Board’s regulatory process requirements. The Board is pursuing, with the Canadian Environmental Assessment Agency, approaches to streamline these processes, while properly giving effect to the legislation and ensuring protection of the environment and other public interests.

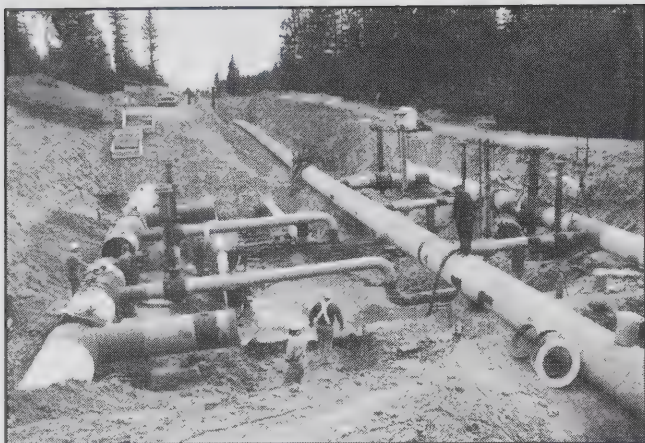
There is a strong movement in the U.S. to foster competition in electric power markets by providing open access to transmission for all electric power generators, including Canadian exporters. As a result, many new players are entering the export market in Canada, including new marketing companies, which have received export permits in recent years.

The Board has adapted its regulatory processes to these changes by adopting market solutions to regulation, wherever possible, while making sure that all relevant public interests are protected.

The following pages describe the ongoing changes in the regulatory environment under each of the Board’s main responsibilities and the Board’s responses to these changes.

(i) New Pipeline Facilities

In the past, applications to construct new natural gas pipeline facilities were supported by long-term gas sales contracts, evidence on the adequacy of the markets to be



served and the adequacy of gas supply, as well as the required transportation contracts and export licences. The primary regulatory concern was to ensure that only necessary facilities would be constructed. As a result, extensive market evidence was required to support the need for new facilities. More recently, applications for pipeline capacity have tended to rely primarily on long-term transportation contracts as evidence that facilities are justified, with less emphasis on market evidence and long-term gas sales contracts. This, in part, mirrors the shift towards short-term sales in domestic and export markets.

Moreover, the potential for new entry into the Canadian pipeline business has arisen, with several projects being proposed which would compete with established pipelines. Proponents of some of these projects have stated that they are willing to incur a higher level of business risk than pipelines under traditional cost-of-service regulation.

The changing market dynamics, including the potential for some competition, may challenge the traditional regulatory paradigm under which monopoly pipelines are regulated. The Board has demonstrated its flexibility in considering applications in this changing environment as evidenced by its approval in June of the Express Pipeline. Shareholders of this important new oil export pipeline will bear the risk of under-utilization.

On 1 July, jurisdiction over interprovincial and international commodity pipelines was transferred from the National Transportation Agency to the NEB. Commodity pipelines are pipelines that transport non-hydrocarbons such as steam, brine or pulp. They exclude municipal water and sewer lines.

(ii) Tolls and Tariffs

In the last few years, pipelines have increasingly used the Board's guidelines for negotiated settlements to establish the framework for the determination of tolls. Several major pipelines and their shippers have opted to largely replace traditional cost-of-service regulation with negotiated incentive schemes. Under cost-of-service regulation, there is little incentive for pipelines to seek out economies because cost savings are typically passed on to shippers. Under incentive regulation, cost savings are shared between the pipeline company and its shippers, thereby aligning their interests and encouraging mutually-beneficial solutions to providing cost-effective transportation services.

Early in the year, TransCanada PipeLines Limited ("TCPL") and its shippers concluded a negotiated settlement under which the annual net revenue requirement of the company will be determined for each year from 1996 to 1999. A large component of TCPL's annual costs will be subject to incentive provisions which encourage the search for efficiencies. Future applications to the Board will deal mostly with matters not addressed in the settlement. A number of the other large pipelines under the Board's jurisdiction have negotiated incentive settlements with their shippers, including: Interprovincial Pipe Line Inc. ("IPL"); Trans Mountain Pipe Line Company Ltd.; and Trans-Northern Pipelines Inc.

Although reliance on traditional adversarial approaches to toll regulation is waning, it is likely that issues such as pipeline access and toll design for specific transportation services will still require referral to the Board for resolution. One example in 1996 was an application by PanCanadian Petroleum Ltd. ("PCP") to direct IPL to accept PCP's natural gas liquids at Kerrobert, Saskatchewan for delivery on IPL's system.

Currently, there is much interest on the part of both shippers and pipelines in innovative tolling methodologies to facilitate the construction of new pipeline capacity. The divergent interests of shippers and pipeline companies, and the differing interests among shipper groups, are likely to require the continued involvement of an independent regulatory agency to facilitate the implementation of innovative, but fair, new tolling practices. In December, the Board received a request by the Canadian Association of Petroleum Producers for an industry workshop on matters

related to tolling, particularly with respect to new pipeline facilities.

In northeast British Columbia, Westcoast Energy Inc.'s ("WEI") dominant market position in providing gas gathering and processing services is being challenged by several companies that are building their own facilities. In response, WEI is seeking increased flexibility in setting its tolls. The development of potential competition in this market raises fundamental regulatory issues.

(iii) Exports

Natural Gas Exports

The NEB Act requires that the Board ensure that long-term exports of natural gas are surplus to reasonably foreseeable Canadian requirements. In 1987, the Board determined that it could generally rely on markets to protect Canadian needs. Experience since that date has demonstrated that Canadians can meet their natural gas needs at fair market prices through contractual arrangements. This experience has been documented in the Board's November 1996 publication, *Canadian Natural Gas, Ten Years after Deregulation*.

The Board has endeavoured to adopt procedures to regulate natural gas exports that respond to the evolution of the market and the public interest. In 1996, the Board implemented a written hearing process to improve its efficiency in dealing with routine long-term gas export licence applications. In addition, the Board also released new *NEB Act Part VI (Oil and Gas) Regulations* which streamline the filing requirements. Taken together, these changes simplify the licence application process for natural gas exporters while continuing to protect relevant Canadian public interests.

Applications for long-term export licences have been traditionally supported by long-term sales contracts with specific end-users. In recent years, the Board has received applications for long-term export licences from marketers and aggregators which have been underpinned by long-term supply and transportation arrangements but which have not been supported by long-term sales to specific end-users in the export market. This reflects an ongoing shift to short-term sales in the gas market.

Oil Exports

Crude oil is currently bought and sold only on a short-term basis. Under the NEB Act, heavy crude oil may be

exported for periods of up to two years and light crude oil for up to one year pursuant to Board orders. In response to a request from the Minister, the Board recommended a regulatory process to assess licence applications for the long-term export of oil (see "Requests from the Minister" page 7).

Electricity Exports

Major changes are occurring in the electricity sector, particularly in the U.S., characterized by the creation of competitive markets, the mitigation of market dominance in the generation sector and consequent changes in regulatory requirements. A key element of a competitive electric power market is open access to transmission, allowing generators equal access to the power grid and providing purchasers with a choice of supplier. In January 1996, Alberta became the first jurisdiction in North America to introduce a competitive framework for its electricity industry. In some other provinces, non-utility generators and neighbouring utilities are gaining limited access to transmission as a result of industry restructuring.

The Board has issued several export permits to independent power marketers. In some cases, authorization has been granted to export from anywhere in Canada over any international power lines to any customer in the U.S. Although very small, the first export by a marketer and the first export to a retail customer both occurred in 1996.

In order to facilitate electricity exports in this evolving market, the Board has issued "blanket" permits which allow exporters to take advantage of market opportunities and make short-term export sales without any further Board approval. Most of these blanket permits are for ten-year periods and allow short-term exports of up to five years. However, all exporters must still satisfy the Board's Fair Market Access criterion which states that Canadian electricity buyers must have access to electricity on similar terms and conditions, including price, as the electricity that is exported.

(iv) Safety

The Board regulates approximately 40 000 kilometres of pipelines in Canada, both in the provinces and in frontier regions. Since much of this infrastructure was constructed during the 1950s and 1960s, maintenance of these systems is growing in importance. The Board recognizes that its safety mandate will continue to evolve, with

greater emphasis on ensuring the integrity of the existing pipeline infrastructure, while still maintaining the safety of pipeline design and construction.

In response to increased concern about pipeline failures associated with stress corrosion cracking ("SCC") on Canadian pipelines, the Board held a wide-ranging public inquiry to examine this problem. The inquiry provided a forum to: determine the scope of the SCC problem on Canadian pipelines; review the state of technical understanding of the phenomenon and the status of research; hear concerns about public safety; and identify potential solutions and mitigative measures to effectively minimize pipeline failures due to SCC.

In December 1996, the Inquiry Panel released its report on the *Inquiry into Stress Corrosion Cracking on Canadian Oil and Gas Pipelines*. The report includes 27 recommendations to promote public safety on oil and gas pipelines, including recommendations that most NEB-regulated pipeline companies: implement an SCC management program; improve emergency response practices; continue research into SCC; establish an SCC database; change certain aspects of the design of pipelines; and continue the open sharing of information. The Board accepted all of the Panel's recommendations and they are now being implemented.

The Board approved two applications for the abandonment of existing pipeline systems, owned by Yukon Pipelines Ltd. and Manito Pipelines Ltd., which had come to the end of their useful lives.

In keeping with a federal government-wide effort to harmonize regulatory requirements, the NEB and the Transportation Safety Board ("TSB") are presently collaborating on an initiative which would allow federally-regulated pipeline companies to report incidents only to the TSB which, in turn, would ensure that the appropriate incident information is forwarded to the NEB's investigators. Implementation of this single-point incident reporting mechanism is expected by the first quarter of 1997.

The Board's *Onshore Pipeline Regulations* address the safety and environmental issues related to the design, construction, operation and abandonment of pipeline facilities. The Board prepared its first major update of these regulations since 1989 and released a draft version for comment in July 1996. These regulations have been simplified and now place greater emphasis on maintenance.

(v) Environment

The Board continues to keep pace with the changing field of environmental protection. 1996 provided the Board with another year of experience in working with the CEA Act which was proclaimed in 1995. To avoid duplication and overlap, the Board is integrating the requirements of the CEA Act with its procedures under the NEB Act.

The Board has ongoing initiatives to streamline the assessment of certain types of projects, while continuing to maintain an appropriate degree of environmental review and protection. Among these initiatives are the implementation of Class Screenings and, in consultation with the Canadian Environmental Assessment Agency, identification of possible additions to the CEA Act *Exclusion List Regulations*. Class screenings would generally apply to those projects or class of projects for which, because of their routine nature, the environmental effects and appropriate mitigation measures are well-known. Any projects proposed for addition to the *Exclusion List Regulations* would, by their nature, have insignificant environmental effects.

In 1996, with the Express Pipeline project, the Board participated in the first joint panel review to be held at the federal level pursuant to the CEA Act. The panel was comprised of two NEB members and two federally-appointed environmental experts. The project involved the construction of approximately 435 kilometres of crude oil pipeline in Alberta to serve markets in the U.S. The review was carried out in accordance with an agreement between the NEB and the Minister of the Environment. The Joint Panel conducted a 34-day oral hearing and submitted a report outlining 39 recommendations which addressed major concerns associated with wildlife, fisheries, vegetation and other substantive issues. A unique aspect of this



process was the participation of several federal government departments in responding to the Joint Panel report under the CEA Act. The Government of Canada accepted the recommendations set out in the Joint Panel report and imposed one further requirement related to fisheries. Subsequent to Cabinet approval of this response, the Board approved the construction and operation of the Express Pipeline and incorporated the recommendations from the Joint Panel report and the additional fisheries requirement as conditions of its approval.

At the federal-provincial level, the Board also entered into an agreement for a Joint Public Review for the environmental and socio-economic assessments of the Sable Gas Projects, which include the Sable Offshore Energy Project ("SOEP") and the Maritimes and Northeast Pipeline Project ("M&NE"). The SOEP involves the development, production and processing of natural gas from six offshore fields in the vicinity of Sable Island. The M&NE project involves the construction and operation of a pipeline to transport natural gas to domestic markets and markets in the northeast United States.

The Joint Panel will conduct public hearings and will submit a report on its conclusions and recommendations to the signatories of the Joint Review Agreement, which include: the Minister of Environment Canada; the Minister of Natural Resources Canada; the Minister of the Environment, Province of Nova Scotia; the Minister of Natural Resources, Province of Nova Scotia; the Chairman, NEB; and the Acting Chief Executive Officer, Canada-Nova Scotia Offshore Petroleum Board ("CNSOPB"). Regulatory decisions will be made by the NEB Panel, a subset of the

Joint Panel, for facilities coming directly under NEB jurisdiction. Other regulatory authorities, such as the CNSOPB and the provincial governments, will make decisions with respect to the facilities in their jurisdictions. By year-end, the participants had created a joint secretariat, located in Halifax, Nova Scotia. Additionally, the Joint Panel had held a number of scoping sessions to determine the range of issues to be addressed in public hearings, scheduled to begin in April 1997.

(vi) Requests from the Minister of Natural Resources Canada

In 1996, the Board acted on two requests from the Minister. In response to a request to recommend regulatory procedures to assess licence applications for the long-term export of oil from Canada, the Board submitted a report to the Minister in October. The Board recommended that a procedure be adopted that is similar to the fair market access procedure used to approve applications for electricity export permits. In December, the Minister requested the Board to implement this procedure.

In December 1995, the Minister requested that the Board advise her of options to implement intervenor funding at the NEB, within the framework of existing federal legislation. The Board submitted a report on the options in March 1996. In July, the Minister authorized the Board to release the report to the public and requested that it seek the views of interested parties. In December, the Board submitted a supplementary report to the Minister which summarized the submissions and set out the Board's recommendations.

Energy Commodities Overview

Most of Canada's petroleum and natural gas is transported by NEB-regulated pipelines and the bulk of energy exports must be approved by the Board. As an expert regulatory tribunal, the NEB must have sound knowledge of matters relevant to its mandate. To maintain its knowledge of the energy industry, the Board monitors energy markets on an ongoing basis and publishes its findings in various forms. This overview provides a summary of changes in Canadian energy consumption, production and trade over the last five years. For readers interested in greater detail, statistical appendices are available upon request (see Annex V for the list).

ENERGY AND THE ECONOMY

Canada is endowed with a great wealth of energy resources that include fossil fuels, hydroelectric potential, uranium and renewable resources. Energy plays an important role in Canada's economy as energy revenues represent about seven percent of Gross Domestic Product ("GDP"). The country's size and northerly climate translates into high transportation and heating requirements. Over the past five years, transportation and space heating have accounted for nearly 40 percent of Canada's domestic energy consumption (Table 1). Petroleum and natural gas have supplied about two-thirds of the country's energy needs, a share that has been roughly constant since the 1970s.

In 1996, Canadians consumed approximately 275 gigajoules per capita of end-use energy, about the same as in the U.S. Over the last five years, energy consumption has been growing at an average annual rate of 3.4 percent, about one percentage point higher than the average growth in GDP. Total consumption in 1996 was 14 percent higher than in 1992.

Total energy production has grown by 27 percent since 1992. Production of natural gas has grown the most rapidly, increasing by 32 percent over the past five years (Table 2).

Canada is an important player in North American energy trade and net energy export revenues have been growing since the late 1980s (Figure 1). This growth can be attributed to rising energy demand in the U.S., the ongoing energy deregulation initiatives in Canada and the U.S. that began in the mid-1980s, and the recent exchange rate which has been favourable to exports. The increase in production and exports has benefitted Canada in the form of higher export revenues. At the same time, the market has ensured that reliable supplies are available to Canadian energy buyers.

Natural gas continues to make the greatest contribution to net export earnings, although its share fell in 1996 as the value of petroleum exports rose with higher oil prices. Export revenues from total petroleum exports are greater than those from natural gas, but the large volumes of oil imported into eastern Canada, which cost about

Table 1
Domestic Energy Consumption by End Use
(Petajoules)

	1992	1993	1994	1995	1996 ^(a)
Space Heating	1 798	1 869	1 886	1 918	1 961
Transportation	1 870	1 917	2 027	2 073	2 146
Other Uses	3 149	3 231	3 320	3 454	3 563
Non-Energy Use	680	735	745	727	744
Electricity Generation ^(b)	1 728	1 827	1 979	2 029	2 141
Total	9 225	9 579	9 957	10 201	10 554

(a) Estimates

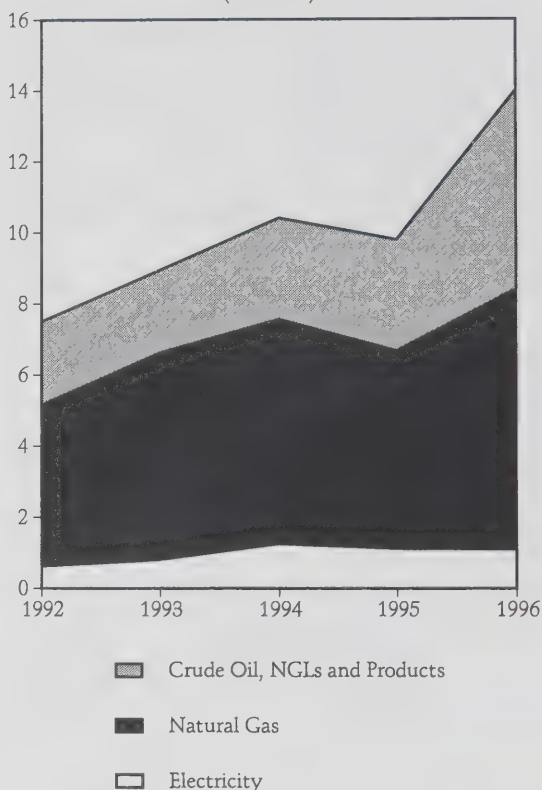
(b) Includes other losses

Table 2
Domestic Energy Production by Energy Source
(Petajoules)

	1992	1993	1994	1995	1996 ^(a)
Petroleum	4 320	4 556	4 829	5 033	5 283
Natural Gas	4 456	4 885	5 294	5 592	5 890
Hydroelectricity	1 128	1 153	1 175	1 190	1 214
Nuclear	912	1 064	1 221	1 108	1 155
Coal	1 546	1 651	1 735	1 799	1 817
Renewables and Other	502	500	541	589	612
Total	12 827	13 825	14 854	15 367	16 247

(a) Estimates

Figure 1
Net Energy Export Revenues
(\$Billions)



\$8.5 billion in 1996, offset more than half of those revenues. In total, natural gas, petroleum and electricity exports generated almost \$24 billion in gross export revenue in 1996, or almost \$15 billion on a net basis. Energy exports accounted for about 12 percent of Canada's total merchandise exports, thereby making a significant positive contribution to the nation's trade performance.

CRUDE OIL AND LIQUIDS

Production and Reserves Replacement

Production of crude oil and equivalent set a new record of 317.6 thousand cubic metres (2 million barrels) per day, surpassing the previous record set in 1973 (Table 3). The growth in total crude oil production has been a major success story for the Canadian industry as heavy crude production has increased substantially and, contrary to earlier forecasts, production rates of light conventional crude oil have decreased only marginally.

Production of heavy oil grew by 45 percent over the last five years, due mainly to the successful application of horizontal well and innovative pumping technologies. During the same period, total light oil production increased by five percent due to increases in synthetic crude and pentanes plus production.

Production records were set for both bitumen and conventional heavy oil in 1996. It is likely that the increase in heavy crude oil production was limited by pipeline capacity restrictions, despite a number of expansions in trunk pipeline capacity. Compared to 1995, the increase in heavy oil supply more than offset a two percent decrease in total production of light oil. Production of conventional light crude fell by four percent, while synthetic crude oil production declined marginally and pentanes plus production increased by two percent.

Natural gas liquids ("NGL") production increased by 16 percent since 1992, primarily due to higher natural gas production.

While remaining established reserves are reduced by production each year, new discoveries, extensions to existing pools and revisions to reserves estimates in existing pools add to existing reserves. At year-end 1995, the last year for which data are available, remaining reserves of conventional crude oil totalled 667 million cubic metres (4.2 billion barrels), down about one percent from 1991. From 1991 to 1995, on a cumulative basis, additions

Table 3
Canadian Production of Crude Oil and Natural Gas Liquids

(thousand cubic metres per day)

	1992	1993	1994	1995	1996(a)
Conventional Light	140.7	143.9	148.5	145.1	140.0
Synthetic Crude Oil	37.2	38.6	41.6	43.2	42.7
Pentanes Plus	21.4	23.7	24.6	25.8	26.4
Total Light	199.4	206.3	214.8	214.1	209.1
Conventional Heavy	55.0	61.5	65.7	73.4	82.3
In-situ Bitumen	19.9	20.9	21.2	23.7	26.2
Total Heavy	74.8	82.3	86.9	97.2	108.5
Total Crude Oil and Equivalent	274.2	288.6	301.7	311.3	317.6
Natural Gas Liquids	77.0	78.8	80.6	86.3	89.1

(a) Estimates

to established reserves of conventional light and heavy crude oil have replaced 94 percent of production (Table 4). Remaining reserves of bitumen in active projects were estimated to be 574 million cubic metres (3.6 billion barrels) at year-end 1995, an increase of 14 percent since 1992.

The level of drilling activity is an important factor in determining reserves additions and production levels. In 1996, 6 334 oil wells were completed, more than twice the number completed in 1992 (Figure 2). The high level of oil-directed drilling in recent years, notably horizontal drilling, resulted in reserves additions exceeding production in 1995.

Petroleum Imports and Exports

Crude oil imports have grown by 33 percent since 1992 to a level of 108.5 thousand cubic metres (683.6 thousand barrels) per day in 1996. North Sea crude accounted for 52 percent of total imports and crudes from OPEC countries accounted for 41 percent. (The Atlantic provinces also import substantial volumes of crude oil which are refined and exported as petroleum products; these volumes are not included in the data.)

Imports of NGL have fluctuated over the last five years but only account for about one percent of the total supply. Imports of main petroleum products have remained largely unchanged at 11.4 thousand cubic metres (71.8 thousand barrels) per day over the last five years.

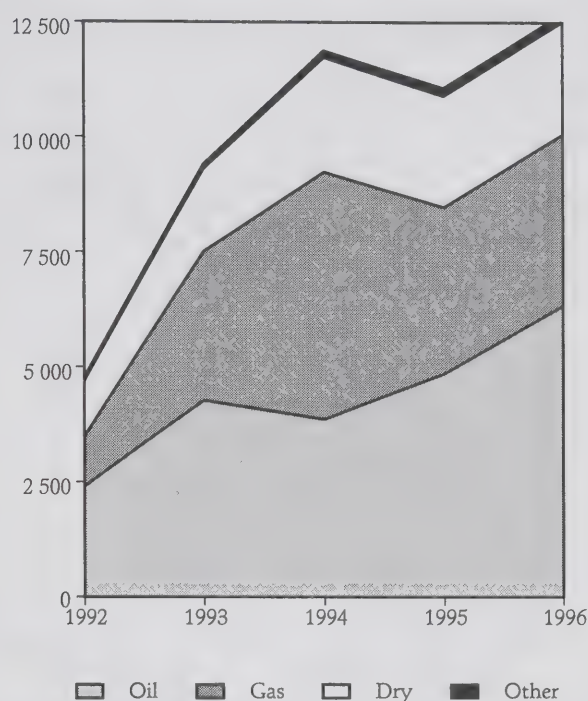
Total crude oil exports, including pentanes plus and synthetic crude, have grown by 32 percent since 1992. In 1996, crude oil exports reached 177.1 thousand cubic metres (1.1 million barrels) per day, comprised of almost equal parts of light and blended heavy crude oil.

The U.S. Midwest continued to be Canada's most important market, accounting for 71 percent of the export market, followed by Montana and Washington with 20 percent. Smaller volumes were shipped from offshore Nova Scotia to the U.S. Gulf Coast and Europe.

Table 4
Conventional Crude Oil Reserves
Additions and Production
(million cubic metres)

	1991	1992	1993	1994	1995	Total
Additions	59	76	83	47	90	355
Production	71	72	75	78	80	376
Remaining	676	680	688	657	667	

Figure 2
Number of Wells Drilled

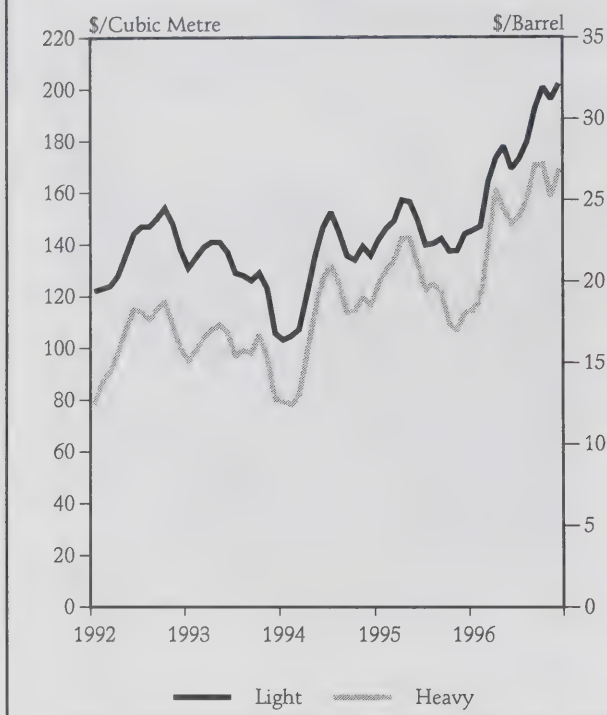


In 1996, estimated average light and heavy crude oil export prices were \$176.70 and \$151.00 per cubic metre (\$28.05 and \$23.95 per barrel), respectively. Although prices have fluctuated over the past five years they have been trending higher and, by 1996, were about 30 percent and 45 percent higher for light and heavy crude oil respectively than in 1992 (Figure 3).

NGL exports have grown by 62 percent since 1992, reaching a total of 32.5 thousand cubic metres (204 thousand barrels) per day in 1996. This growth can be attributed to relatively flat domestic demand and increasing supply.

Exports of main petroleum products and partially-processed oil increased by 36 percent from 1992 to a level of 41.9 thousand cubic metres (264 thousand barrels) per day in 1996. The U.S. continued to be the largest buyer, receiving almost 97 percent of total exports. The U.S. East Coast, followed by the Midwest, were the two largest markets. Exports were also made to the Far East and Europe.

Figure 3
Light and Heavy Crude Oil Export Prices



On balance, Canada is a net exporter of crude oil and petroleum products, with the U.S. being the principal market (Figure 4).

Oil Pipeline Capacity

Oil pipeline capacity has grown gradually over the past five years. During 1996, the Edmonton-Sarnia portion of Interprovincial Pipe Line Ltd.'s ("IPL") system operated at capacity. For the last nine months of 1996, nominations to ship on IPL's system consistently exceeded capacity, resulting in monthly apportionment. By year-end, IPL had completed about 85 percent of its 19 thousand cubic metres (120 thousand barrels) per day of its System Expansion Program. This expansion, along with the construction of the new Express Pipeline which will enter service in 1997, and completion of phase two of IPL's expansion program, should alleviate pipeline constraints.

NATURAL GAS

Production and Reserves Replacement

The production of marketable natural gas continues to grow, setting new records every year. Over the past five years production has increased by 32 percent to 158.2 billion cubic metres (5.6 trillion cubic feet) in 1996. Alberta accounted for 84 percent of production, while British Columbia contributed 12 percent, with the balance coming from Saskatchewan and Ontario.

Remaining established reserves of marketable natural gas as of year-end 1995 are estimated to be 1 829 billion cubic metres (64.6 trillion cubic feet). This figure does not include any volumes for the east coast offshore or the arctic. From 1991 to 1995, additions of marketable gas reserves replaced 82 percent of total production (Table 5). Reserves have been added as a result of both new discoveries and revisions to reserves estimates in existing pools. As with oil, drilling plays a key role in determining gas production levels and reserves additions. Over 3 000 gas wells were completed in each year from 1992 to 1996, peaking in 1994 with a total of 5 370 gas well completions. Although gas wells accounted for less than half of all wells drilled in 1996, gas-directed drilling accounted for 60 percent of successful exploration wells (Figure 2).

Natural Gas Imports and Exports

Imports of natural gas have been insignificant compared to production, totalling only 1.6 billion cubic metres (0.056 trillion cubic feet) in 1996. Increased import capacity and various market opportunities that arose over the year enabled Canadian buyers to diversify their gas supplies with some U.S. purchases.

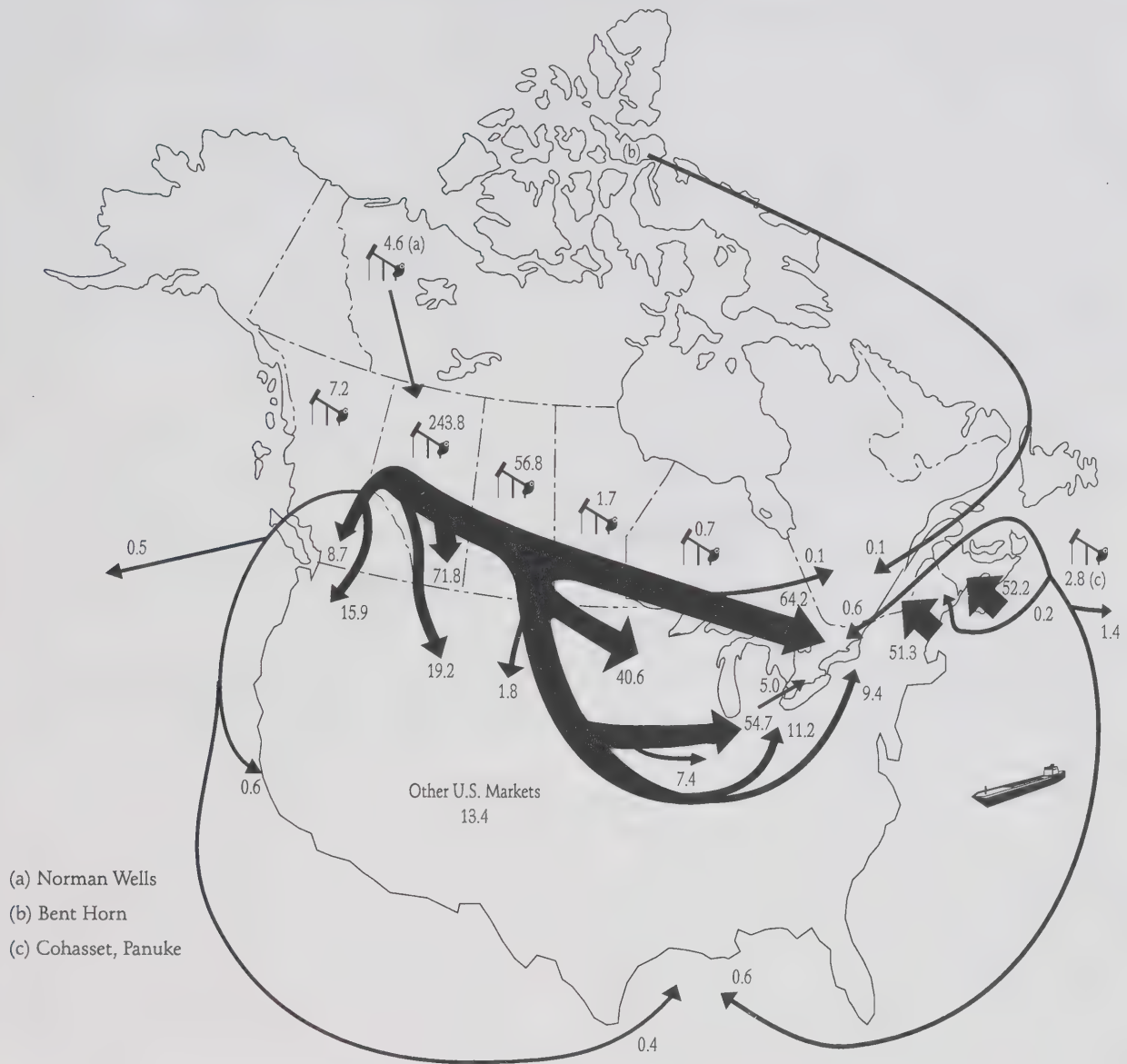
Natural gas exports have increased by about 38 percent since 1992, reaching a record level of 80.7 billion cubic

Table 5
Natural Gas Production and Reserves Replacement

(billion cubic metres)

	1991	1992	1993	1994	1995	Total
Additions	116	67	107	81	166	537
Production	108	120	131	142	150	651
Remaining	1 951	1 898	1 874	1 813	1 829	

Figure 4
Crude Oil and Equivalent Supply and Disposition 1996
 (thousand cubic metres per day)



metres (2.85 trillion cubic feet) in 1996. However, exports only grew by two percent in 1996, largely due to limitations on pipeline capacity. Natural gas exports were regionally distributed as follows: 35 percent to the Midwest Region; 24 percent to California; 23 percent to the Northeast; 17 percent to the Pacific Northwest; and one percent to the Mountain Region (Figure 5).

Sales of Canadian natural gas exported under short-term Board orders (up to two years) continued to increase, reaching 48.4 billion cubic metres (1.71 trillion cubic feet) in 1996, up from 26.3 billion cubic metres (0.9 trillion cubic feet) in 1992. Sales under short-term orders now account for 60 percent of total natural gas exports. The balance of natural gas exports occurred under long-term licences,

Figure 5
Natural Gas Supply and Disposition 1996
 (billion cubic metres)



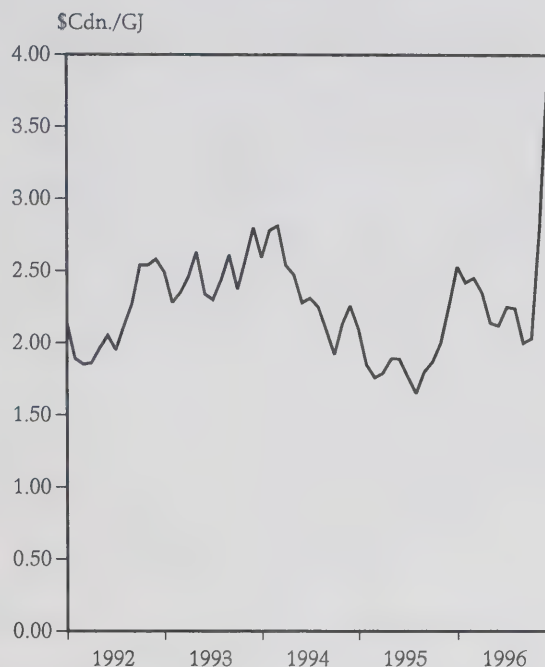
which may have terms of up to 25 years, although licences issued in recent years have generally had terms of less than 15 years.

Natural Gas Export Prices

Over the last five years, natural gas prices have been volatile, rising in 1993, falling rapidly in 1994/95, and recovering in 1996 (Figure 6). Average monthly natural gas

export prices were consistently higher in 1996 than in 1995, reflecting a tighter supply/demand balance in the U.S. Export prices were particularly strong during late 1996 as cold weather drove up demand in many market areas. For 1996, Canadian export prices averaged \$2.44 per gigajoule ("GJ") at the international border, up from \$1.89 per GJ in 1995.

Figure 6
Natural Gas Export Prices
(at the international border)



Natural Gas Pipeline Capacity

Export capacity on natural gas pipelines increased by 44 percent between 1992 and 1996 to 255 thousand cubic metres (9 billion cubic feet) per day. The growth in pipeline capacity has not always kept up to the expansion in productive capacity. Lack of available pipeline capacity limited the growth in exports last year and had a dampening effect on prices for gas sold in the western producing basin. About 10 million cubic metres (360 million cubic feet) per day of import capability was added in 1996 with the completion of three new projects into southwestern Ontario.

ELECTRICITY

Electricity production increased by nine percent from 1992 to 1996. The percentage contribution from nuclear and thermal generation has been declining while hydroelectric production has been increasing (Table 6). In 1996, approximately 65 percent of generation was from hydroelectric sources, 21 percent from conventional thermal and 14 percent from nuclear generation. Total Canadian consumption is estimated to have been 509 terawatt hours.

Electricity Imports and Exports

As with natural gas, Canada's electricity imports are small, about 1.7 terawatt hours in 1996.

Electricity exports in 1996 were strong compared with the early 1990s, mainly due to increased demand in U.S. markets and favourable hydraulic conditions in Canada. 1996 saw the second-highest level of exports since 1987 and the third-highest export quantity ever, reaching 42 terawatt hours. Although electricity prices have fluctuated, since 1992 the average price of firm exports has risen 28 percent and the price of interruptible exports has increased 19 percent. Five utilities supplied about 95 percent of Canada's electricity exports in 1996. In order of quantities exported, they were Hydro Québec, Manitoba Hydro, B.C. Hydro, Ontario Hydro and New Brunswick Power. New York state was the biggest single U.S. importer of electricity, accounting for 18 percent of purchases, while the six New England states accounted for about 32 percent (Figure 7).

SUMMARY

In recent years, the rate of growth in domestic demand for energy has outstripped the rate of growth in GDP. Canadian oil production and total energy production reached record levels in 1996, although some limits on exports and production may have been imposed by constraints on both oil and natural gas pipeline capacity. In 1996, reserves additions were greater than production for both oil and gas.

Petroleum and natural gas exports continue to make a strong contribution to Canada's trade performance despite the level of oil imports into the eastern part of the country. Electricity exports have shown recent strength and will likely continue to perform well as access to transmission systems is expected to improve.

Table 6
Electricity Production^(a)
(terawatt hours)

	1992	1993	1994	1995	1996 ^(b)
Hydroelectric	312	317	329	336	357
Nuclear	75	82	108	92	77
Thermal	116	112	103	114	115
Total	503	511	540	542	549

(a) Source: Statistics Canada

(b) Estimates

Figure 7
International and Interprovincial Transfers of Electricity in 1996(a)
 (gigawatt hours)



(a) Data for interprovincial transfers of electricity are from 1 November 1995 to 31 October 1996 and are compiled from Statistics Canada *Electric Power Statistics Monthly*.

Data for United States imports and exports are for 1996 (excludes exchanges) and are compiled by the NEB.

Applications

The Board deals with approximately 750 applications each year under various sections of the *National Energy Board Act* ("NEB Act"), including applications for:

- the construction of pipeline facilities;
- pipeline tolls and tariffs;
- short-term orders for the export of oil and natural gas, and the importation of natural gas;
- permits for electricity exports; and
- long-term natural gas export licences.

Most of the applications, such as applications for short-term export orders, electricity permits and small pipeline facility projects, are handled through an internal process which does not result in a public hearing.

The Board also processes applications under the *Canada Oil and Gas Operations Act* which are discussed in the Operations section of this report (page 23).

PUBLIC HEARINGS

For applications in which there is broad public interest, the Board holds either oral or written public hearings. In 1996, the Board held 11 oral hearings in Whitehorse, Vancouver, Calgary, Winnipeg and London. The hearings concerned:

Pipeline expansion	3
Pipeline purchase	1
New pipeline construction	2
Pipeline abandonment	2
Facilities access	1
New international power line construction	1
Public inquiry on stress corrosion cracking	1

No oral hearings were held on pipeline toll applications because most of the major gas and oil pipeline companies settled most toll and tariff matters through negotiation with their shippers. The Board held five written hearings, three of which considered pipeline toll matters and two of which considered applications for licences to export natural gas. In addition, 17 scoping sessions were held in connection with the Sable Gas Projects.

ENVIRONMENTAL SCREENINGS

The Board ensures that projects applied for under various sections of the NEB Act receive appropriate levels of environmental assessment by conducting a screening, in accordance with the NEB Act and/or the *Canadian Environmental Assessment Act* ("CEA Act"). Some screenings may require only a brief review of the technical and environmental information provided by an applicant for the Board to grant approval. Other projects, which are on the *Inclusion List Regulations* of the CEA Act, may require additional information, expert advice from other federal departments and subsequent preparation of a more detailed screening document. Although the majority of projects covered by the CEA Act will undergo an environmental assessment through a screening, projects listed on the *Comprehensive Study List* of the CEA Act require a more rigorous assessment of associated environmental effects. Some projects may be referred to mediation or a review by a joint panel. For example, the Express Pipeline project was assessed by a joint review panel. Further information regarding the Board's environmental role as a "responsible authority" under the CEA Act is contained in the Board's August 1996 *Information Bulletin IX, Protection of the Environment*.

In 1996, the Board carried out 133 environmental screenings in regard to gas and oil pipelines, energy exports, and an international power line project. Those projects for which screenings have been or are being carried out under the CEA Act are listed in a national project registry, maintained by the Canadian Environmental Assessment Agency. The Board continues to contribute to the registry as part of its responsibilities under the CEA Act.

FINANCIAL REGULATORY AUDITS

The Board conducts financial regulatory audits of pipeline companies under its jurisdiction. These audits are an important tool for ensuring that companies have maintained their accounts in accordance with the Board's *Gas and Oil Uniform Accounting Regulations* and have complied with the Board's orders and decisions.

In 1996, the Board conducted financial audits of TransCanada PipeLines Limited, Westcoast Energy Inc., Trans Mountain Pipe Line Company Ltd. and Trans-Northern Pipeline Inc.

CYCLE TIMES

The Board undertakes to process applications as expeditiously as possible, while ensuring that all relevant public interest matters are duly considered. Applications for short-term export orders are typically processed in two days and applications for small pipeline facilities are usually processed in less than seven weeks, depending on their completeness and complexity. Excluding the Express Pipeline, the applications considered by oral hearings in 1996 required on average 20 weeks to process, compared to 23 weeks in 1995. It took 53 weeks to process the Express

Pipeline Ltd. application, partly because it involved the first joint panel review process undertaken by the Board in accordance with the CEA Act. In 1996, applications considered by written hearings averaged 12 weeks to process, compared to 18 weeks in 1995.

1996 HEARINGS, INQUIRIES AND REVIEWS

The following tables summarize the public hearings, inquiries and reviews that were held in 1996. In addition to these proceedings, the Board received a number of applications in 1996 which have been set down for hearing in 1997. A summary of legal proceedings in which the Board was involved in 1996 is provided in Annex II (page 35).

PUBLIC HEARINGS

Pipeline Facilities

Applicants	Applications	Hearings	Decisions
Interprovincial Pipe Line Inc. and Westspur Pipe Line Company Inc. (Applications dated 7 September 1995)	Interprovincial - System Expansion Phase I - construct pumping and associated facilities on its system, install two new tanks, one at Hardisty, Alberta and one in Cromer, Manitoba and toll methodology. Estimated Cost: \$86 million	OHW-2-95 - Written hearing held in 1995.	Reasons for Decision dated January Approved
	Westspur - Portal Link Project - Construct 33.4 kilometres of pipeline from its Steelman terminal to North Portal, Saskatchewan and toll methodology. Estimated Cost: \$5.25 million		
Novagas Clearing-house Pipeline Ltd. (Application dated 12 October 1995)	Pesh Creek Pipeline - Construct 16.5 kilometres of natural gas pipeline from northeastern British Columbia to northwestern Alberta. Estimated Cost: \$2.9 million	CH-1-96 - Hearing held on 19 and 20 January in Calgary, Alberta. (2 days)	Reasons for Decision dated January Approved
Westcoast Energy Inc. (Application dated 6 October 1994)	Expansion of the Fort St. John gathering system and construction of a new gas plant at Aitken Creek, British Columbia. Estimated Cost: \$398 million	CH-5-94 - Hearing held from 6 February to 10 March 1995 in Fort St. John and Vancouver, British Columbia. (25 days) On 4 April 1996, Westcoast advised that it would not proceed with this project.	Reasons for Decision dated February Approved

Applicants	Applications	Hearings	Decisions
Express Pipeline Ltd. (Application dated 8 June 1995)	Construct 435 kilometres of oil pipeline from Hardisty to Wild Horse, Alberta. Estimated Cost: \$196 million	OH-1-95 - Hearing held from 15 January to 7 March in Calgary, Alberta. (34 days) An NEB/Canadian Environmental Assessment Agency joint panel was established to consider the application.	Report of the Joint Review Panel dated May Reasons for Decision dated June Approved
TransCanada PipeLines Limited (Application dated 19 December 1995)	St. Clair River Crossing - Construct a 0.4-kilometre natural gas pipeline across the St. Clair River near Sarnia, Ontario. Estimated Cost: \$4.2 million	GH-2-96 - Hearing held on 26 and 27 March in London, Ontario. (2 days)	Reasons for Decision dated May Approved
Manito Pipelines Ltd. (Application dated 31 January 1996)	Abandon 21 kilometres of oil pipeline from Blackfoot, Alberta to Dulwich, Saskatchewan.	MH-1-96 - Hearing held from 21 to 24 May in Calgary, Alberta. (4 days)	Reasons for Decision dated July Approved
Interprovincial Pipe Line Inc. (Application dated 12 January 1996)	System Expansion Phase II - Construct 148 kilometres of oil pipeline from Edmonton to Hardisty, Alberta and other modifications to the system. Estimated Cost: \$140 million	OH-1-96 - Hearing held from 3 to 7 June in Calgary, Alberta. (4 days)	Reasons for Decision dated July Approved
Westcoast Energy Inc. (Application dated 15 January 1996)	Purchase natural gas pipelines and associated facilities in the Helmet North, Midwinter and Peggo areas of British Columbia and toll methodology. Estimated Cost: \$30.7 million	MH-2-96 - Hearing held from 17 to 24 June in Vancouver, British Columbia. (4 days)	Reasons for Decision dated July Approved
Westcoast Energy Inc. (Application dated 17 June 1996)	Upgrade the Fort St. John raw gas transmission system and change operating procedures.	GH-4-96 - The oral hearing was cancelled due to an agreement between Westcoast and certain shippers concerning receipt point pressures on the Fort St. John system. A written procedure was adopted.	Order Decision dated 13 August Approved (Order XG-W5-32-96)
Yukon Pipelines Limited (Application dated 12 July 1995)	Abandon 144.5 kilometres of pipeline in British Columbia and the Yukon Territory, a pump station and tank located near Carcross, Yukon and an Upper Tank Farm located in Whitehorse, Yukon.	MH-3-96 - Hearing held on 20 August in Whitehorse, Yukon. (1 day)	Reasons for Decision dated September Approved
TransCanada PipeLines Limited (Application dated 3 April 1996, revised on 2 August 1996)	1997-1998 Facilities - Construct 205.2 kilometres of natural gas pipeline looping and upgrades to the system in Saskatchewan, Manitoba and Ontario. Estimated Cost: \$897 million	GH-3-96 - Hearing held from 7 to 10 October in Winnipeg, Manitoba. (4 days)	Reasons for Decision dated November Approved
Renaissance Energy Ltd. (Application dated 14 May 1996)	Application for access on TransCanada's system and to construct the facilities, if required, to transport natural gas from Empress, Alberta to Emerson, Manitoba.	Application heard during the GH-3-96 proceeding.	Application for access approved. No additional facilities will be required.

Traffic, Tolls and Tariffs

Applicants	Applications	Hearings	Decisions
TransCanada PipeLines Limited (Application dated 5 July 1995, as amended)	Phase 2 of the application for tolls for 1996 and a negotiated settlement for the years 1996 to 1999.	RH-2-95 - The public hearing for Phase 2 was cancelled and TransCanada was requested to hold a public forum to answer questions on the negotiated settlement.	Reasons for Decision dated February Approved Compilation of Key Documents Related to the Board's RH-2-95 Decisions dated June
Trans Mountain Pipe Line Company (Application dated 29 September 1995, as amended)	Tolls for 1995 and 1996 and a negotiated incentive toll settlement for the years 1996 to 2000.	RH-3-95 - Hearing held from 27 to 29 November 1995. (3 days) Technical workshops held on 12 February in Calgary, Alberta and 14 February in Vancouver, British Columbia. Remainder of the proceeding held by written hearing, RHW-2-96.	Letter Decision dated 10 January (revenue requirement for 1995 approved) Reasons for Decision dated February (toll design approved) Reasons for Decision dated March (negotiated settlement approved)
Westcoast Energy Inc. (Application dated 8 December 1995, as amended)	Tolls for 1996 and a negotiated settlement on 1996 revenue requirements.	RH-1-96 - Oral hearing cancelled and written procedure adopted.	Reasons for Decision dated March Approved
Trans Québec & Maritimes Pipeline Inc. (Application dated 27 November 1995, as amended)	Tolls for 1996.	RHW-1-96 - Written Hearing.	Reasons for Decision dated May Approved
Trans-Northern Pipelines Inc. (Application dated 22 April 1996)	Negotiated incentive toll settlement for the years 1996 onward.	RHW-3-96 - Written Hearing.	Reasons for Decision dated June Approved
PanCanadian Petroleum Limited (Application dated 26 July 1996)	Order requiring Interprovincial Pipe Line Inc. to transport natural gas liquids.	MH-4-96 - Hearing held from 4 to 13 November in Calgary, Alberta. (6 days)	Decision pending

Natural Gas Exports

Applicants	Applications	Hearings	Decisions
Altresco Pittsfield Crestar Energy Enron Capital Husky Oil Morgan Hydrocarbons/Coastal Gas (joint application) (Applications dated August 1995)	Five applications to export 8.3 billion cubic metres of natural gas for periods ranging from two to 16 years.	GH-4-95 - Hearing held on 14 November 1995 in Calgary, Alberta. (1 day)	Reasons for Decision, Volume 1 dated January - Four applications approved
Coastal Gas (three applications) Morgan Hydrocarbons/Coastal Gas (joint application) Renaissance Energy St. Lawrence Gas Talisman (two applications) (Applications dated March and April 1996)	Eight applications to export 10.2 billion cubic metres of natural gas for periods ranging from five to 20 years.	GHW-1-96 - Written Hearing.	Reasons for Decision dated September Approved
Coastal Gas Enron Capital PanEnergy Marketing ProGas Limited (three applications) United States Gypsum (Applications dated September 1996)	Seven applications to export 9.5 billion cubic metres of natural gas for periods ranging from 10 to 16 years.	GHW-2-96 - Written Hearing.	The hearing process continued at year-end

Electric Power Line Facilities

Applicant	Application	Hearing	Decision
TransCanada Power Corp. (Application dated 24 September 1996)	Construct an international power line from a point on the international boundary near Wild Horse, Alberta to the Wild Horse Station on the Express Pipeline.	EH-1-96 - Hearing held on 9 and 10 December in Calgary, Alberta. (2 days)	Decision pending

PUBLIC INQUIRY

Subject	Procedures	Results
Stress Corrosion Cracking (SCC)	Meeting with 16 organizations with knowledge of SCC, residents, municipal officials and the Ontario Pipeline Landowners Association. Public Hearing held from 15 to 23 April. (7 days)	The Inquiry Panel's report contained 27 recommendations to promote public safety on the country's oil and gas pipelines.

REVIEWS

Under section 21 of the NEB Act the Board may review, vary or rescind any decision or order made by it or rehear any application before deciding on it. The Board

may initiate a review upon application by an interested party to a hearing or may initiate a review on its own. The following table summarizes the reviews undertaken in 1996.

Applicants	Applications	Decisions
Ashland Scurlock Permian Canada, Ltd. and Ashland Inc. (Application dated 21 December 1995)	Review the Board's decision of 14 December 1995 regarding apportionment on Interprovincial Pipe Lines Inc.'s system.	Dismissed on 4 January
Novagas Clearinghouse Pipelines Ltd. (Application dated 15 January 1996)	Review the Board's decision of 12 January to refer the question of jurisdiction over the upstream and downstream connecting facilities of the Pesh Creek Pipeline to the Federal Court of Appeal ("FCA") (GH-1-96).	Dismissed on 15 January.
Alberta Department of Energy (Application dated 19 March 1996)	Review the Board's decision of 12 January to refer the question of jurisdiction over the upstream and downstream connecting facilities of the Pesh Creek Pipeline to the FCA (GH-1-96).	Dismissed on 14 June.
National Energy Board	The Board decided on its own motion to stay the effect of a letter order, due to changed circumstances which raised doubt as to the correctness of the order, it had issued to Westcoast Energy Inc. on 5 June. The order had been issued as a result of an accident investigation conducted by Board staff on certain of Westcoast's facilities.	Decision to stay the Letter Order made on 11 July. In November, the Board rescinded the Letter Order.
Canadian Association of Petroleum Producers (CAPP) (Application dated 13 September 1996)	Review the Board's decision of 1 August to approve Manito Pipelines Ltd.'s application to abandon a pipeline (MH-1-96).	CAPP withdrew its application on 17 September.
Canadian Energy Pipeline Association (CEPA) (Submission dated 4 December 1996)	CEPA Submission - Questioned the method used to calculate the yearly rate of return on common equity as outlined in the Reasons for Decision RH-2-94 dated March 1995. The Board was of the view that reasonable doubt had been raised as to the correctness of the order and decided to conduct a review of the order.	Decision pending.

Operations

The Board ensures that the risks associated with construction and operation of regulated facilities are properly managed by the facility owner and operator. The Board achieves this objective by:

- developing and maintaining pipeline regulations;
- conducting safety inspection and audit programs;
- investigating pipeline incidents;
- monitoring the clean-up, restoration and mitigation of environmental effects associated with regulated facilities and rights-of-way; and
- investigating landowner complaints related to environmental issues.

However, the primary responsibility for pipeline safety and the associated protection of the environment rests with the owner of the facilities.

The Board is responsible for the regulation of petroleum exploration and development in frontier areas which are not governed by federal-provincial accords. The Board also provides other government agencies with expertise and support in the development of research proposals to address technical and environmental issues that arise from pipeline and frontier activities.

DEVELOPMENT AND MAINTENANCE OF REGULATIONS

The *Onshore Pipeline Regulations* ("OPR") set out technical, safety and environmental requirements for all stages of a pipeline's life-cycle. The Canadian Standards Association provides a technical basis for the OPR. The

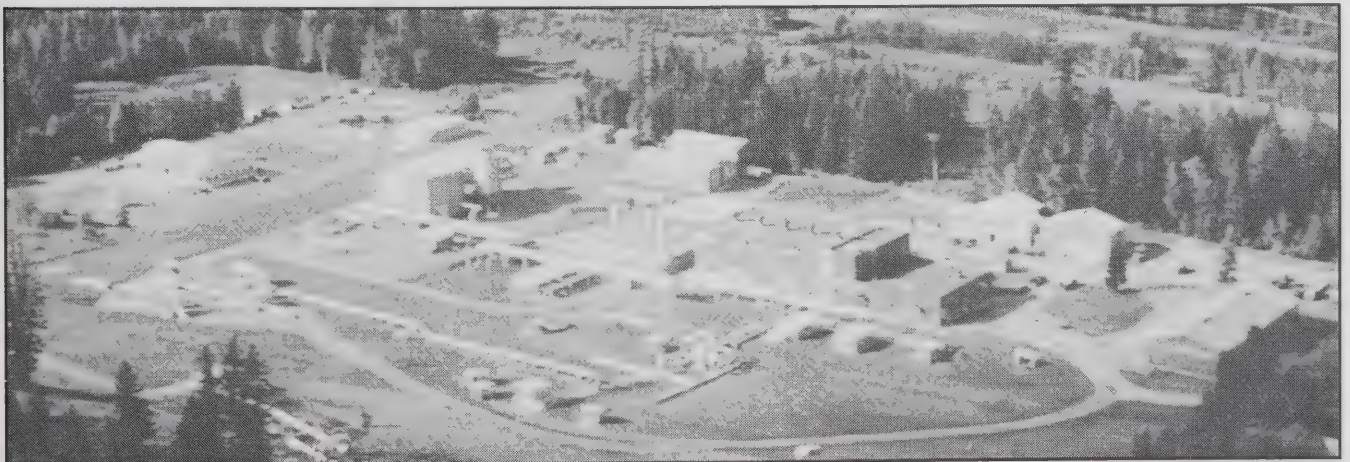
Board participates with industry and other government agencies in the development and maintenance of these standards.

The *Pipeline Crossing Regulations, Parts I and II* require companies to maintain ongoing awareness programs to inform the public of the presence of pipelines. The regulations also establish specific responsibilities of persons intending to conduct excavation or construction activities near pipelines, as well as the responsibilities of pipeline companies.

The Board participates on committees with industry and other government agencies with regard to standardizing environmental regulations and operating procedures. In 1996, these included the Hydrostatic Test Water Management Guidelines Task Force, National Water Course Crossing Committee and Pipeline Rights-of-Way Reclamation Committee.

SAFETY INSPECTION AND AUDIT PROGRAM

The Board conducts regular on-site safety inspections of pipeline systems to ensure compliance with regulatory requirements, approved specifications and procedures, the terms and conditions set out in certificates of approval, and to ensure safety of personnel and the public (Table 7). The Board is empowered under the *National Energy Board Act* ("NEB Act") and the *Canada Oil and Gas Operations Act* ("COGO Act") to promote and provide for public and worker safety, the protection of property and the protection of the



environment relating to facilities under its jurisdiction. In addition, Board staff have been appointed as Safety Officers pursuant to the *Canada Labour Code* to safeguard the occupational health and safety of company field staff.

The engineering inspection program identifies situations of non-compliance which are then brought to the attention of the company. In the majority of instances, companies respond quickly to correct the violation, often before the inspector leaves the site. Companies are requested to provide their Assurance of Voluntary Compliance ("AVC") for violations which cannot be rectified quickly and do not present an immediate or serious hazard. The AVC is followed-up at a later date to ensure that the company has taken appropriate corrective action. Hazardous situations which require immediate and direct action are identified through the issuance of a Board Order by the inspector. As a result of the consultative approach, no field emergency Board Orders relating to safety were issued in 1996.

**Table 7
Safety and Occupational
Health Inspections - 1996**

	Number of Inspections	AVCs Issued
Construction	40	2
Facility and Plants	178	235
Audits	25	118
Pipeline Crossings	28	18
Commodity Pipelines	4	0
Frontier	30	109
Total	305	482

**Table 8
Pipeline Incidents 1992-1996**

	1992	1993	1994	1995	1996
Liquids Pipelines					
Substance release or ignition	10	11	13	20	22
Other	7	12	10	12	6
Total Liquids Pipelines	17	23	23	32	28
Gas Pipelines					
Substance release or ignition	11	19	18	13	14
Other	20	23	27	35	27
Total Gas Pipelines	31	42	45	48	41
Total Incidents	48	65	68	80	69

PIPELINE INCIDENTS

Companies are required to immediately report incidents which result in a fatality, an injury requiring hospitalization, a fire or explosion, an oil spill, a pipeline rupture, or any other failure or malfunction of a pipeline. In 1996, there were 69 incidents reported in accordance with the OPR, down from 80 the previous year. There were seven work-related injuries and no fatalities related to oil and gas pipeline incidents; no member of the public was injured (Table 8).

Incident investigations are an important activity within the Board's pipeline safety program since even minor accidents can provide indications of the condition of a pipeline or areas that require improvement of safety programs. Although the Board investigates all incidents, detailed on-site investigations are usually conducted only for accidents which result in serious injuries or releases of hydrocarbons. In 1996, the Board conducted four major incident investigations (Table 9).

When an accident occurs during the operation of a pipeline, it is also reported to the Transportation Safety Board ("TSB"). If the TSB decides to conduct an investigation, the Board is prohibited from making findings as to the cause and contributing factors of the incident. The TSB has the authority to issue recommendations and the Board may be required to respond to those recommendations. However, the Board may still investigate to ensure that its regulations were not violated and/or to determine the need

**Table 9
Major Investigations - 1996**

Company	Date	Location	Incident	Status
Interprovincial Pipe Line Inc.	27 February	Glenavon, Saskatchewan	Pipeline rupture	TSB investigation ongoing
TransCanada PipeLines Limited ("TCPL")	15 April	St. Norbert, Manitoba	Pipeline rupture and fire	TSB investigation ongoing
TCPL	30 September	Eaglehead, Ontario	Compressor station fire	NEB investigation ongoing
TCPL	11 December	Stewart Lake, Ontario	Pipeline rupture and fire	TSB investigation ongoing

for remedial action. An incident file is not closed until the Board is confident that all reasonable corrective measures have been taken to prevent future similar accidents.

ENVIRONMENTAL INSPECTION PROGRAM

The Board undertakes an environmental inspection program to ensure compliance with its regulatory requirements, approved specifications and procedures, and the terms and conditions set out in any certificates of approval for a project. The program consists of inspections during the construction, post-construction and operational phase of a facility. Incidents resulting in the release of hydrocarbons or other noxious substances are also inspected (Table 10). The program ensures that regulated facilities and rights-of-way have been appropriately protected, reme-

diated or reclaimed to approved or legislated standards. Landowner complaints related to environmental or land rights issues are also part of this program.

Board-appointed Environmental Inspectors are empowered to make orders which could require a company to suspend activities or take measures to ensure safety, protection of property and the environment. Environmental inspections follow a practice of consultation in order to solve environmental problems and most non-compliance situations are addressed quickly by the company. If no immediate assurance and actions for protection of the environment can be obtained from the company, the Environmental Inspector will then follow the Board's normal compliance assurance or emergency order procedures. As a result of this consultation process, no AVCs were issued relating to environmental non-compliance during 1996.

Table 10
Environmental Inspections - 1996

	Number of Inspections
Construction and post-construction	122
Operations	119
Emergency response	15
Frontier	15
Total	271



FRONTIER LANDS

The Board regulates the technical and operational aspects of exploration and development of petroleum resources in frontier areas that are not subject to federal/provincial accords. These responsibilities are exercised in accordance with the provisions of the COGO Act, certain provisions of the *Canada Petroleum Resources Act* and the NEB Act. In considering frontier applications, the Board establishes requirements for conservation of the resource, public and worker safety, protection of property and the environment, as well as the financial capability of operators to meet any potential liabilities that may arise from the authorized activities (Table 11).

Table 11
Frontier Activity - 1996

	Approvals Issued
Drilling program authorization	1
Authority to drill wells	3
Authority to abandon wells	2
Renewal of suspended well status	7
Authority to abandon facilities	2
Total	15

RESEARCH AND DEVELOPMENT

In 1996, the Board managed \$2.3 million of research projects sponsored by the Program for Energy Research and Development ("PERD"). These projects focussed on pipelines, ice and structure interactions, personnel and operational safety, groundwater and soil remediation, structural systems reliability and environmental issues.

In July 1996, the Board decided to cease its project management functions of PERD effective 1 April 1997. Continued guidance will be provided to Natural Resources Canada, the Office of Energy Research and Development and other government departments on research efforts related to the regulation of oil and gas activities by the Board. Projects scheduled for continuation in 1997-98 will be transferred to participating departments.

The Board also has a representative on the Environmental Studies Research Funds ("ESRF") Management Board. The purpose of the ESRF is to finance environmental and social research projects pertaining to the terms and conditions under which petroleum exploration, development and production activities on frontier lands should be conducted. There were four ongoing projects in 1996: the Characterization of Iceberg Pits on the Grand Banks; the Beaufort Beluga Tagging Project; the Mackenzie Delta Borehole Project and the Beaufort Sea Ice Scour Mapping Report. It is expected that reports on these projects will be published in 1997.

Information Management

The Board continually works to improve its methods of communication with the public and the regulated community. In the past several years, the Board has undertaken a series of initiatives to improve access to its publications.

To provide current information on ongoing activities, such as applications received, public hearings, Board decisions, public consultations and changes to regulations and procedures, the Board issues news releases as required. In addition, the Board publishes a quarterly *Regulatory Agenda* which provides detailed information on all its current regulatory and advisory activities.

The Board publishes a number of other documents, including monthly energy export statistics, gas and energy market studies, and Reasons for Decisions on applications. These documents are described in an Information Bulletin entitled *The Board's Publications*.

In December, the Board launched its Internet site, providing electronic access on the World Wide Web to a wide range of documents and information services. This site provides background on the Board's history, its regulatory role and mandate, and an explanation of the hearing process and how the public can participate in it. In addition, it offers full-text versions of news releases, the *Regulatory Agenda*, overviews of hearing decisions and current statistical reports. Internet users are invited to visit the Board's interactive home page at www.neb.gc.ca. More on-line information services will be added periodically.

Together with the Ontario Energy Board ("OEB") and industry representatives, the Board is also pursuing the implementation and development of Electronic Regulatory Filing ("ERF"). The ERF initiative will enable outside parties to exchange documents with the Board and each other electronically. The main goals of ERF are to improve the regulatory process, reduce costs, accelerate document interchange through standardized filings, and improve public access to Board information.

The primary focus of ERF during 1996 was the development of standard document types for most submissions to the Board and the OEB. Sixteen standard electronic document types were developed and will be tested in a

"Proof of Concept" in early 1997. The implementation phase of ERF is planned for late 1997 and 1998.

In 1995, the Board created the Board Document System ("BDS") to provide direct access to an electronic library of regulatory documents. The system contains Reasons for Decision on public hearings dating from 1985 and hearing transcripts from 1991. The Board is continuing to add to the information base that may be accessed on the BDS.

Information bulletins are published on a wide range of topics to assist interested persons in understanding the Board's processes and to facilitate access to information. Bulletins presently available are:

1. Pipeline Route Approval Procedures
2. The Public Hearing Process
3. Non-Hearing Procedures
4. How to Participate in a Public Hearing
5. The Board's Publications
6. The Regulation of Tolls and Tariffs
7. The National Energy Board Library
8. Electric Power: A Compendium of Terms
9. Protection of the Environment
10. Pipeline Tolls and Tariffs: A Compendium of Terms
11. The Frontier Information Office
12. Pipeline Safety
13. Pipeline Regulation: An Overview for Landowners and Tenants

OBTAINING PUBLICATIONS

Any person wishing to receive Board documents should contact the Regulatory Support Office to be placed on any of the following "area of interest" mailing lists:

- L1: Everything the Board issues
- L4. Oil and gas matters
- L5. Electrical matters
- L6: Annual report only
- L7: News releases only
- L8: Regulatory agenda only
- L9: Environmental matters

Many publications are also available in the Board's library. These include applications and submissions, transcripts of hearings, a variety of energy studies, and presentations by Board Members and its officials.

A list of the Board's major publications in 1996 is provided below.

MAJOR DOCUMENTS PUBLISHED IN 1996

Pipeline Facilities

Novagas Clearinghouse Pipeline Ltd. - Pesh Creek

Pipeline - OH-1-96

Letter Decision, 22 January 1996

Reasons for Decision, January 1996

Westcoast Energy Inc. - Fort St. John Expansion -

GH-5-94

Reasons for Decision, February 1996

TransCanada PipeLines Limited - St. Clair River

Crossing - GH-2-96

Reasons for Decision, May 1996

Express Pipeline Ltd. - Pipeline Facilities - OH-1-95

Report of the Joint Review Panel, May 1996

Reasons for Decision, June 1996

Interprovincial Pipe Line Inc. - System Expansion

Phase II - OH-1-96

Reasons for Decision, July 1996

Westcoast Energy Inc. - Helmet/Peggo Facilities -

MH-2-96

Reasons for Decision, July 1996

Manito Pipelines Ltd. - Abandonment of Facilities -

MH-1-96

Reasons for Decision, July 1996

Yukon Pipelines Limited - Abandonment of Facilities -

MH-3-96

Reasons for Decision, September 1996

TransCanada PipeLines Limited - 1997-1998 Facilities -

GH-3-96

Reasons for Decision, November 1996

Tolls and Tariffs

Trans Mountain Pipe Line Company Ltd. - 1995-1996

Tolls - RH-3-95 and RHW-2-96

Letter Decision, 10 January 1996

Reasons for Decision, February 1996

Reasons for Decision, March 1996

TransCanada PipeLines Limited - 1996 Tolls - RH-2-95

Reasons for Decision on Phase 2, 22 February 1996

Compilation of Key Documents Related to the Board's Decisions, June 1996

Westcoast Energy Inc. - 1996 Tolls - RH-1-96

Reasons for Decision, March 1996.

Trans-Northern Pipelines Inc. - Incentive Toll

Settlement - RHW-3-96

Reasons for Decision, June 1996.

TransCanada PipeLines Limited - Great Lakes Refund

Reasons for Decision, September 1996.

Gas Exports

Various Gas Export Applications - GH-4-95

Reasons for Decision, Volume 1, January 1996

Letter Decision, 20 February 1996

Various Gas Export Applications - GHW-1-96

Reasons for Decision, September 1996

Electricity Exports

Saskatchewan Power Corporation

Letter Decision, 19 March 1996

Alberta Power Limited and CU International Limited

Letter Decision, 26 April 1996

Westcoast Gas Services Inc.

Letter Decision, 30 May 1996

Chandler Energy Inc.

Letter Decision, 3 June 1996

Enron Capital and Trade Resources Canada Corporation

Letter Decision, 17 July 1996

British Columbia Power Exchange Corporation
Letter Decision, 13 September 1996

Sonat Power Marketing Inc. and Sonat Power
Marketing L.P.
Letter Decision, 1 November 1996

TransAlta Enterprises Corporation
Letter Decision, 20 December 1996

Reports

Intervenor Funding Options Report, March 1996

Natural Gas Resource Assessment of the Southeast
Yukon and Southern Northwest Territories, June 1996

Natural Gas Market Assessment - Canadian Natural
Gas, Ten Years After Deregulation, November 1996

Report of the Inquiry - Stress Corrosion Cracking on
Canadian Oil and Gas Pipelines - MH-2-95, November
1996

Pipeline Abandonment - A Discussion Paper on
Technical and Environmental Issues, November 1996.

Regulatory

Proposed Procedure for Dealing with Crude Oil and
Equivalent Export Licence Applications, 29 May 1996

Offshore Waste Treatment Guidelines, 1996,
September 1996

Information

Regulatory Agenda - January, April, July and October

National Energy Board - 1995 Annual Report,
April 1996

National Energy Board - Annual Report Pursuant to
Access to Information Act and Privacy Act,
1 April 1995 - 31 March 1996

National Energy Board, An Introduction (revised)

Information Bulletin IX, Protection of the
Environment (Revised), August 1996

Information Bulletin V, The Board's Publications
(Revised), August 1996

Corporate Services

Corporate Services provides the Board with support in managing its finances, human resources and administration.

The Board continues to seek methods to streamline its operations with a view to providing effective regulation at a reasonable cost. As a result, the total budget decreased from \$30.9 million in the 1994-1995 fiscal year to an estimated \$30.1 million for 1996-1997. The Board is requesting a budget appropriation of \$28 million for fiscal year 1997-98 (Table 12).

Detailed information on the Board's 1996 budget can be found in the National Energy Board's 1995-96 and 1996-97 Estimates, Part III, Expenditure Plans which are available on request.

Since 1991, the Board has been operating under the NEB Cost Recovery Plan, through which approximately 85 percent of the Board's costs are recovered from the regulated community, rather than the taxpayer. Cost recovery is based on staff time spent on regulation of each commodity, the volume of throughput of natural gas, crude oils and liquids on Board-regulated pipelines, and on the quantities of electricity exported. The actual cost amounts to less than half a cent per gigajoule of energy transported on systems under the Board's jurisdiction.

Reorganization

Starting in 1995, the Board undertook an extensive review of its processes and, through staff initiatives, a series of recommendations were made that identified a

Table 12
Financial Summary
(fiscal year: 1 April - 31 March)
(thousands of dollars)

	Budget Appropriation	Actual Expenditure
1992-93	33 570	24 447
1993-94	32 031	28 439
1994-95	30 866	27 377
1995-96	30 271	25 911
1996-97	30 117	28 000 ^(a)
1997-98	28 000	

(a) The estimated expenditure reflects an increase over the previous year due to the Electronic Regulatory Filing initiative and Employee Benefit Plan costs as established by Treasury Board.

new vision of the Board. In keeping with this vision, in 1996 the Board implemented a major reorganization which will be complete by April 1997. Instead of ten functional branches, the Board will be organized around its five major lines of business: Applications, Commodities, Operations, Information Management and Corporate Services. This new structure will allow the Board to better serve the needs of its publics.

ANNEX I - The Board's Mandate

The National Energy Board is an independent regulatory tribunal established in 1959. It reports to Parliament through the Minister of Natural Resources Canada (the "Minister"). At the end of 1996, it had six permanent members, out of a possible total of nine, and one temporary member. The Board is a court of record. With regard to attendance at hearings, the swearing and examining of witnesses, production and inspection of documents and the enforcement of its orders, it has the powers of a superior court.

The Board's regulatory powers include the granting of authorizations for: the construction and operation of inter-provincial and international oil, gas and commodity pipelines; construction and operation of international and designated interprovincial power lines; the setting of tolls and tariffs for oil and gas pipelines under its jurisdiction; the export of oil, natural gas and electricity and the import of natural gas.

The Board also has regulatory powers under the *Canada Oil and Gas Operations Act* ("COGO Act") and certain provisions of the *Canada Petroleum Resources Act* for oil and gas exploration and activities on frontier lands not otherwise regulated under joint federal/provincial accords.

The Board's mandate includes providing expert technical advice to the Canada-Newfoundland and the Canada-Nova Scotia Offshore Petroleum Boards, Natural Resources Canada and Indian and Northern Affairs Canada.

Under the *Canadian Environmental Assessment Act*, the Board is responsible for conducting environmental assessments of the planning, construction, operation, maintenance and abandonment of energy projects within its jurisdiction. Under the *National Energy Board Act* ("NEB Act") and the COGO Act, the Board's environmental activities have evolved into three distinct phases: evaluating the potential environmental effects of proposed projects; monitoring and enforcement of terms and conditions attached to project approval; and the ongoing, long-term monitoring of operations.

The Board is responsible for ensuring the safe operations of the pipelines under its jurisdiction and the Board's inspectors are appointed Safety Officers for the administration of Part II of the *Canada Labour Code*.

The Board provides advice to the Minister on matters relating to its regulatory expertise upon the Minister's request. The Board also has specific responsibilities under the *Northern Pipeline Act* and the *Energy Administration Act*.

Below is a listing of Acts, Regulations, Rules and Guidelines under which the Board operates or has responsibilities.

ACTS, REGULATIONS, RULES AND GUIDELINES

Acts

- National Energy Board Act
- Canada Oil and Gas Operations Act
- Canada Petroleum Resources Act
- Canadian Environmental Assessment Act
- Canada Labour Code Part II
- Energy Administration Act
- Northern Pipeline Act

Regulations Pursuant to the National Energy Board Act

- Cost Recovery Regulations
- Export and Import Reporting Regulations
- Gas Pipeline Uniform Accounting Regulations
- Oil Product Designation Regulations
- Oil Pipeline Uniform Accounting Regulations
- Onshore Pipeline Regulations
- Offshore Pipeline Regulations
- Part VI (Oil and Gas) Regulations
- Part VI Regulations, Electricity
- Pipeline Crossing Regulations, Part I
- Pipeline Crossing Regulations, Part II
- Power Line Crossing Regulations
- Substituted Service Regulations
- Toll Information Regulations

Regulations Pursuant to the Canada Oil and Gas Operations Act

Canada Oil and Gas Certificate of Fitness Regulations
Canada Oil and Gas Diving Regulations
Canada Oil and Gas Drilling Regulations
Canada Oil and Gas Installations Regulations
Canada Oil and Gas Geophysical Regulations
Canada Oil and Gas Production and Conservation
Regulations
Canada Oil and Gas Operation Regulations
Oil and Gas Spills and Debris Liability Regulations

Regulations Pursuant to the Canadian Environmental Assessment Act

Law List Regulations
Inclusion List Regulations
Comprehensive Study List Regulations
Exclusion List Regulations

Rules

Rules of Practice and Procedure

Guidelines

Guidelines for Filing Requirements (22 February 1995).
The Guidelines set out the information to be provided by
applicants for:

- Early public notification of projects
- Certificates for gas pipelines exceeding 40 kilometres
- Certificates for oil pipelines exceeding 40 kilometres
- Section 58 orders for gas pipelines under 40 kilometres or additions and upgrades to existing facilities
- Section 58 orders for oil pipelines under 40 kilometres or additions and upgrades to existing facilities

- Environmental, socio-economic and lands information for authorization to construct, operate and abandon pipelines
- Notices required when dealing with determination of detailed route and approval
- Leave to open orders for pipelines
- Orders fixing tolls and tariffs
- Quarterly surveillance reports to be filed by Group 1 companies
- Orders for export and import of gas.

Guidelines for Negotiated Settlements of Traffic, Tolls and Tariffs (23 August 1994)

Guidelines Respecting Physical Environmental Programs During Petroleum Drilling and Production Activities on Frontier Lands (April 1994)

Financial Regulatory Audit Policy of the National Energy Board (1 December 1994)

Memorandum of Guidance - Regulation of Group 2 Companies (6 December 1995)

Memorandum of Guidance - Retention of Accounting Records by Group 1 Companies Pursuant to Gas/Oil Uniform Accounting Regulations (30 November 1994)

Memorandum of Guidance to Interested Parties Concerning Full Implementation of the September 1988 Canadian Electricity Policy (7 July 1993)

Offshore Waste Treatment Guidelines, September 1996

Oil and Gas Occupational Safety and Health Guidance Notes (April 1992)

Section 58 Streamlining Initiative - Order XG/XO-100-94, Revision 1 (16 November 1995)

ANNEX II - Legal Proceedings

Section 22 of the NEB Act allows for appeals to the Federal Court of Appeal ("FCA") with leave of that court from any decision or order of the Board on questions of law or jurisdiction. The Board may, in accordance with the

Rules of *Practice and Procedure*, 1995, refer to the FCA a question or issue of law, of jurisdiction, or of practice or procedure that arises during any proceeding. Below is a listing of legal proceedings in 1996.

Applicants	Applications	Decisions
National Energy Board	On 25 July 1995, the Board decided to refer to the FCA a jurisdictional question regarding an application by Westcoast Energy Inc. to expand its Pine River Gas Plant and Grizzly Valley raw gas transmission system (GH-6-94).	On 9 February, the FCA decided that the Board had jurisdiction over the facilities.
National Energy Board	On 12 January 1996, the Board referred to the FCA a jurisdictional question over certain upstream and downstream facilities connecting to Novagas Clearinghouse Pipeline Ltd.'s Pesh Creek Pipeline (GH-1-96).	The preliminary motions were heard in Vancouver in November. The application to quash the reference will be heard in Vancouver starting 13 January 1997.
Manitoba Hydro (Application dated 30 December 1992)	Application to the FCA for leave to appeal the Board's decision issued on 31 August 1992 regarding alterations to the Dorsey Substation.	Manitoba Hydro withdrew its application for leave to appeal.
Westcoast Energy Inc. (Application dated 9 June 1995)	Application to the FCA for leave to appeal the Board's decision dismissing, for reasons of jurisdiction, Westcoast's application to expand its Fort St. John gas gathering system and to construct a new gas treatment plant (GH-4-95).	On 9 February, the FCA decided that the facilities were under the Board's jurisdiction.
BC Gas Utility and the Attorney General for the Province of British Columbia (Applications dated 20 and 26 October 1995)	Application to the FCA to quash the reference over Westcoast's Grizzly Valley Expansion Project for a jurisdictional decision (GH-6-94).	On 9 February, the FCA decided that the facilities were under the Board's jurisdiction.
The Consumers' Gas Company Ltd. (Application dated 30 October 1995)	Application to the FCA for leave to appeal the Board's decision of September 1995 in which it decided that it had jurisdiction over the Company's Ottawa East Line once it was connected to the proposed Niagara Gas Transmission Ltd. line.	On 13 March, the FCA decided that the Board did not have jurisdiction over the Ottawa East Line.
West Moberly First Nations (Application dated 8 December 1995)	Application to the Supreme Court for leave to appeal the FCA's decision of 13 October 1995 in which it dismissed the First Nations' application for leave to appeal the Board's decision to approve the expansions of Westcoast Energy Inc.'s Southern and Fort Nelson Mainlines (GH-2-95).	On 6 June, the Court dismissed the application for leave to appeal.
Richard Leroux and 417 Auto Wreckers Limited (Application dated 22 January 1996)	Application to the FCA for leave to appeal and for an order for judicial review of the Board's decision of 22 December 1995 that the applicant had not sufficiently demonstrated that the operations and aggregate fell within the definition of mines and minerals in section 81 of the NEB Act.	On 6 May, the FCA quashed the application for judicial review. However, on 29 March the Court granted the application for leave to appeal but only on a single question of law concerning the Board's interpretation of section 81 of the NEB Act.
Westcoast Energy Inc. (Application dated 22 January 1996)	Application to the FCA for leave to appeal the Board's decision of 21 February to approve Novagas Clearinghouse Pipeline Ltd.'s application to construct the Pesh Creek Pipeline (GH-1-96).	On 29 July 1996, the FCA dismissed the application for leave to appeal.

Applicants	Applications	Decisions
TransCanada PipeLines Limited (Application dated 29 February 1996)	Application to the FCA to quash Richard Leroux and 417 Auto Wreckers Limited's application for a judicial review.	On 6 May, the FCA quashed Richard Leroux's application for judicial review.
BC Gas Utility Ltd. (Application dated 3 April 1996)	Application to the Supreme Court of Canada for leave to appeal the FCA's decision of 9 February in which it decided that Westcoast Energy Inc.'s Grizzly Valley and Fort St. John's expansion projects were under the Board's jurisdiction (GH-4-94 and GH-6-94).	On 3 October, the Court granted leave to appeal.
Richard Leroux and 417 Auto Wreckers Limited (Application dated 19 June 1996)	Application to the FCA for leave to appeal the Court's decision to quash the application for judicial review.	Decision on leave to appeal pending.
Alberta Wilderness Association and the Federation of Alberta Naturalists (Application dated 19 June 1996)	Application to the FCA for leave to appeal the environmental review and approval of the Express Pipeline Project (OH-1-95).	On 24 July, the Court upheld the Joint Review Panel's Report.
Rocky Mountain Ecosystem Coalition (Application dated 20 June 1996)	Application to the Federal Court Trial Division, referred to the FCA, seeking to quash the report of the Joint Review Panel regarding the environmental review of the Express Pipeline Project (OH-1-95).	On 24 July the Court upheld the Joint Review Panel's Report.
Attorney General of the Province of Alberta (Application dated 11 July 1996)	Application to the FCA for an order quashing the Board's reference to the FCA regarding the jurisdictional question with respect to the Pesh Creek Pipeline (GH-1-96).	The preliminary motions were heard in Vancouver in November. The application to quash the reference will be heard in Vancouver starting 13 January 1997.
Canadian Hunter Exploration Ltd. (Application dated 22 August 1996)	Application to the FCA for leave to appeal the Board's decision of 25 July 1995 in which it decided, as a result of the approval of Tidal Resources Inc.'s application to construct a pipeline, that it had jurisdiction over certain upstream gathering facilities owned by Canadian Hunter.	On 7 November, the FCA granted the leave to appeal the application.
Morgan Hydrocarbons Inc. (Application dated 3 September 1996)	Application to the FCA for leave to appeal the Board's decision of July to approve the abandonment of a portion of Manito Pipelines Ltd.'s pipeline. An application to stay the Board's order was also filed with the Court (MH-1-96).	The Court is currently holding the leave to appeal application in abeyance at the request of the Applicant.
Hydro-Québec (Application dated 23 September 1996)	Notice of Motion to the Federal Court Trial Division to review, pursuant to section 44(1) of the <i>Access to Information Act</i> , the Board's decision dated 4 September 1996 in which the Board decided that a copy of a firm diversity contract between the Applicant and Consolidated Edison would be made available to Mouvement au Courant as requested.	A motion to determine if the application is proper is pending before the Court.
British Columbia Wilderness Federation (Application dated 11 October 1996)	Application to the FCA for leave to appeal the Board's decision of 13 September in which it authorized British Columbia Power Exchange Corporation to export electricity to Intalco Aluminum Corporation.	Decision on leave to appeal pending.
Rocky Mountain Ecosystem Coalition ("RMEC") (Application dated 29 October 1996)	Application to the Supreme Court of Canada for leave to appeal the FCA's decision of 24 July dismissing RMEC's application for judicial review of the Joint Review Panel's Report regarding the Express Pipeline Project (OH-1-95).	Decision on leave to appeal pending.

ANNEX III - Companies under NEB Jurisdiction

The following is a list of the pipeline companies and electric power entities which own and/or operate inter-provincial or international pipelines or power lines under the Board's jurisdiction. The pipeline companies have been divided into two groups. Group 1 consists of the ten major pipeline companies which are audited by the Board on a regular basis and whose operating results are continuously monitored by the Board. The 61 companies under the Board's jurisdiction that are not included in Group 1 have been designated as Group 2 companies.

Group 1 Gas

- Alberta Natural Gas Company Ltd
- Foothills Pipe Lines Ltd.
- TransCanada PipeLines Limited
- Trans Québec & Maritimes Pipeline Inc.
- Westcoast Energy Inc.

Group 1 Oil and Products

- Cochin Pipe Lines Ltd.
- Interprovincial Pipe Line Inc.
- Interprovincial Pipe Line (NW) Ltd.
- Trans Mountain Pipe Line Company Ltd.
- Trans-Northern Pipelines Inc.

Group 2 Gas

- Bellator Exploration Inc.
- Blue Range Resource Corporation
- Canadian Hunter Exploration Ltd.
- Canadian-Montana Pipe Line Company
- Canor Energy Ltd.
- Centra Transmission Holdings Inc.
- Champion Pipe Line Corporation Limited
- Chauvco Resources Ltd
- Chief Mountain Gas Co-op Ltd.
- Consumers' Gas (Canada) Limited
- Cube Energy Corp.

- ELAN Energy Inc.
- Fletcher Challenge Energy Canada Inc.
- Huntingdon International Pipeline Corporation
- Husky Oil Operations Ltd.
- Interenergy Sheffield Processing Company (Canada) Ltd.
- Many Islands Pipe Lines (Canada) Limited
- Mid-Continent Pipelines Limited
- Minell Pipeline Ltd.
- Murphy Oil Company Ltd.
- Niagara Gas Transmission Limited
- Novagas Clearinghouse Pipelines Ltd.
- Peace River Transmission Company Limited
- Penn West Petroleum Ltd.
- Petrorep Resources Ltd.
- Poco Petroleums Ltd.
- Portal Municipal Gas Company Canada Inc.
- Quest Oil and Gas Ltd
- Remington Energy Ltd.
- Renaissance Energy Ltd.
- Revenue Canada Customs and Excise
- Rigel Oil and Gas Ltd.
- SCL Quebec Pipeline Inc.
- St. Clair Pipelines Ltd.
- Stampeder Exploration Ltd.
- Talisman Energy Inc.
- Union Gas Limited
- Wascana Energy Inc.
- 177293 Canada Ltd.

Group 2 Oil and Products

- Aurora Pipe Line Company
- Dome Kerrobert Pipeline Ltd. and
PanCanadian Kerrobert Pipeline Ltd.
- Dome NGL Pipeline Ltd.
- Dome NGL Pipeline Ltd. and
Amoco Canada Petroleum Company Ltd.
- Ethane Shippers Joint Venture
- Express Pipeline Ltd.

Genesis Pipeline Canada Ltd.
 Imperial Oil Resources Limited
 ISH Energy Ltd.
 Joint Ventures of the Bi-Provincial Upgrader
 Manito Pipelines Ltd.
 Montreal Pipe Line Limited
 Northwest Transmission Company Limited
 Novacor Chemicals (Canada) Ltd.
 Petroleum Transmission Company
 PrimeWest Energy Inc.
 Pouce Coupé Pipe Line Ltd.
 Rigel Oil and Gas Ltd.
 SCL Pipeline Inc.
 Sun-Canadian Pipe Line Company Limited
 Wascana Pipe Line Ltd.
 Westspur Pipe Line Company Inc.
 Yukon Pipelines Limited

Commodity Pipelines

E. B. Eddy Forest Products Ltd.
 Fraser Inc.
 Genesis Pipeline Canada Ltd.
 Penn West Petroleum Ltd
 Stone Consolidated Corporation

Electric Power Utilities and Others

Alberta Power Limited and CU International Limited
 Boise Cascade Canada Ltd.
 British Columbia Hydro and Power Authority
 Canadian Niagara Power

Canadian Sandpoint Power Association
 The Canadian Transit Company
 Cedars Rapids Transmission Company Limited
 Chandler Energy Inc.
 Cominco Ltd.
 Detroit and Canada Tunnel Corporation
 Enron Capital and Trade Resources Canada Corporation
 Farms (including cottages and isolated loads)
 Fraser Inc.
 Hydro-Québec
 Lac La Croix Power Authority
 Maine and New Brunswick Power
 Manitoba Hydro-Electric Board
 James R. McMurrich
 New Brunswick Electric Power Commission
 Ontario Hydro
 Roseau Electric Cooperative Inc.
 Saskatchewan Power Corporation
 Sonat Power Marketing Inc. and
 Sonat Power Marketing L.P.
 St. Clair Tunnel Corp.
 TransAlta Utilities Corporation
 TransAlta Enterprises Corporation
 West Kootenay Power Ltd.
 Westcoast Gas Services Inc.

ANNEX IV - Cooperation with Other Agencies

The Board cooperates with other agencies, wherever practical, to reduce regulatory overlap and provide more efficient regulatory services. In addition, the Board provides assistance to other countries who seek to benefit from the Board's long experience and success as a leading regulatory agency.

COOPERATION WITH OTHER GOVERNMENT AND REGULATORY AGENCIES

Northern Pipeline Agency

The Board provides technical and administrative assistance to the Northern Pipeline Agency, which, pursuant to the *Northern Pipeline Act*, has primary responsibility for overseeing the planning and construction of the Canadian portion of the proposed Alaska Natural Gas Transportation System by Foothills Pipe Lines Ltd. A Board Member serves as Administrator and Designated Officer of the Agency. In 1996, the position was vacant until August, when Mr. Kenneth Vollman was appointed to a one-year term.

Transportation Safety Board of Canada

While the National Energy Board has exclusive responsibility for regulating the safety of oil and gas pipelines under federal jurisdiction, it shares the responsibility for investigating pipeline incidents with the Transportation Safety Board of Canada. The roles and responsibilities of each body with regard to pipeline accident investigations are outlined in a Memorandum of Understanding ("MOU") between the two boards.

Human Resources Development Canada

The Board has an MOU with Human Resources Development Canada to coordinate the safety functions under the COGO Act and the NEB Act. This MOU applies to all Board-regulated pipelines and associated facilities.

Natural Resources Canada ("NRCan")

In May 1996, the Board signed an MOU with NRCan to reduce duplication and increase cooperation between the agencies. This MOU covers items such as data collection and development, the enhancement of energy models and special studies.

Yukon Territory Government

The Board continues to work with Yukon officials to facilitate the transfer of oil and gas regulatory responsibilities in accordance with the *Yukon Accord Implementation Agreement*. The Board provides expert technical advice to the Yukon Territory Government.

Alberta Energy and Utilities Board ("AEUB")

In 1995, the Board and the AEUB entered into an MOU on Pipeline Incident Response. The agreement provides for mutual assistance and a faster and more effective response by both boards to pipeline incidents in Alberta.

During the year, the Board continued its involvement in a Pipeline Task Force with the AEUB. The purpose of this task force is to develop consistent and compatible regulatory requirements. It is expected that this process will result in more efficient use of organizational resources, leading to a reduced regulatory burden on both the pipeline industry and the public.

The Board and the AEUB have developed a common reserves database for oil and gas reserves in Alberta. Both boards are committed to developing more efficient methods for maintaining estimates of reserves and to exploring other opportunities for cooperation.

British Columbia Ministry of Employment and Investment

Following a technical protocol agreement signed in 1995, discussions are continuing to investigate areas of co-operation and collaboration.

Ontario Energy Board ("OEB")

The Board is pursuing its Electronic Regulatory Filing ("ERF") initiative as a joint venture with the OEB and twenty other key participants in the regulatory arena. The ERF initiative will result in a fully functional electronic system for the creation, exchange, use and reuse of regulatory information. Cooperation with the OEB will ensure its applicability in both jurisdictions.

Saskatchewan Department of Energy

Preliminary discussions have been held with regard to establishing a common reserves database.

COOPERATION WITH OTHER COUNTRIES

During 1996, the Board cooperated with several foreign countries by providing information on the Board's regulatory role and other energy-related matters. Consultations took place with representatives from Argentina, Australia, Brazil, Chile, China, Columbia, France, India, Japan, the Kyrgyz Republic, Mexico, Norway, Russia, the Ukraine and the United Kingdom.

ANNEX V - List of Appendices and Statistical Reports

The following Appendices and Statistical Reports are available upon request (see page 42).

Appendix A

- A1 Crude Oil and Equivalent Supply and Disposition
- A2 Estimated Established Reserves of Crude Oil and Bitumen - December 1995
- A3 Natural Gas Supply and Disposition
- A4 Estimated Established Reserves of Marketable Natural Gas - December 1995
- A5 Natural Gas Liquids Supply and Disposition
- A6 Geophysical activity
- A7 Exploration and Development Expenditures
- A8 Sales of Exploration Rights in Western Canada
- A9 1996 Sales of Exploration Rights in Frontier Regions
- A10 Electricity Generation and Disposition

Appendix B

- B1 Certificates Issued During 1996 Approving the Construction of New Oil Pipeline Facilities Exceeding 40 Kilometres in Length
- B2 Orders Issued During 1996 Approving Oil Pipeline Facilities Including Pipeline Construction Not Exceeding 40 Kilometres in Length
- B3 Exports of Canadian Crude Oil and Equivalent - 1995 and 1996
- B4 Exports of Canadian Crude Oil and Equivalent - 1992-1996
- B5 Exports of Petroleum Products by Month - 1996
- B6 Exports of Petroleum Products by Company - 1995 and 1996

Appendix C

- C1 Certificates Issued During 1996 Approving the Construction of New Gas Pipelines Exceeding 40 Kilometres in Length

- C2 Orders Issued During 1996 Approving Gas Pipeline Construction Not Exceeding 40 Kilometres in Length
- C3 Licences and Long-Term Orders to Export Natural Gas as at 31 December 1996
- C4 Licences and Long-Term Orders to Import Natural Gas as at 31 December 1996
- C5 Natural Gas Exports by Export Point, 1992-1996
- C6 Total Net Exports of Propane and Butanes, 1995-1996

Appendix D

- D1 Certificates and Permits Issued During 1996 in Respect to International Power Lines
- D2 Amending Orders Issued During 1996 in Relation to International Power Lines
- D3 Licences Issued During 1996 Relating to the Export of Electricity
- D4 Permits and Orders Issued During 1996 Relating to the Export of Electricity
- D5 Electricity Exports 1996
- D6 Electricity Trade Between Canada and the United States (by Province)
- D7 Electricity Trade Between Canada and the United States (by American Region/State)

Appendix E

- E1 Financial Information - Group 1 Oil Pipeline Companies with Multi-year Incentive Toll Agreements
- E2 Financial Information - Group I Oil Pipelines without Incentive Agreements
- E3 Financial Information - Group 1 Gas Pipeline Companies

Statistical Reports Available

- Crude Oil Supply, Disposition and Price Report – Monthly
- Crude Oil Run Report – Weekly
- Electricity Exports and Imports – Monthly
- Estimated Supply of Canadian Crude Oil & Equivalent – Quarterly
- Exports of Main Petroleum Products – Monthly
- LPG Underground Inventories in Canada – Monthly
- Natural Gas Exports and Imports – Monthly
- Propane and Butane Exports Report – Monthly
- Western Canada Heavy and Light Crude Oil Availability – Quarterly

To obtain a paper or an electronic copy of the Appendices, or a paper copy of the Statistical Reports contact:

**National Energy Board
Regulatory Support Office
311 Sixth Avenue S.W.
Calgary AB
T2P 3H2**

**Telephone: (403) 292-4800
Facsimile: (403) 292-5503**

The Annual Report is also available on the Internet at www.neb.gc.ca.

ANNEX VI - Metric Conversion Table

The National Energy Board uses the International System of Units. The energy units most commonly referred to in this report are the gigajoule and the petajoule. Combustion of a 30-litre gasoline tank expends approximately one gigajoule of energy. A petajoule is one million gigajoules. On average, Canada consumes about one petajoule of energy for all uses (heat, light and transportation) every 50 minutes.

The following conversion table is provided for the convenience of readers who may be more familiar with the Imperial System.

APPROXIMATE CONVERSION FACTOR

metre	=	3.28	feet
kilometre	=	0.62	mile
cubic metre of oil	=	6.3	barrels
cubic metre of natural gas	=	35.3	cubic feet
gigajoule	=	0.95	thousand cubic feet of natural gas at 1000 Btu per cubic foot or 0.165 barrels of oil, or 0.28 megawatt hours of electricity
hectare	=	2.47	acres
gigajoule	=	10 ⁹	joules
petajoule	=	10 ¹⁵	joules
gigawatt hour	=	10 ⁶	kilowatt hour
terawatt hour	=	10 ⁹	kilowatt hour

NOTE: The data and statistics for 1996 are estimates in most cases, since actual values were generally not available at the time of printing this report.

Organization

BOARD MEMBERS

Roland Priddle	Chairman	Judith Snider ^(c)	Member
Kenneth Vollman ^(a)	Vice-Chairman	Glennis Lewis ^(d)	Temporary Member
Anita Côté-Verhaaf ^(b)	Member	Richard Revel ^(d)	Temporary Member
Roy Illing	Member	Robert Fournier ^(e)	Temporary Member
Robert Andrew, Q.C.	Member		

- (a) On 6 August, Kenneth Vollman was appointed, in addition to his responsibilities as Member and Vice-Chairman of the Board, Administrator and Designated Officer of the Northern Pipeline Agency for a one-year term.
- (b) On 26 August, Anita Côté-Verhaaf was re-appointed Board Member for two years and three months.
- (c) On 17 May, Judith Snider, Board General Counsel and Director of Law Branch, was appointed Board Member for a seven-year term.
- (d) On 31 December, Glennis Lewis and Richard Revel's terms as Temporary Board Members were completed. However, they were not active since July, following the approval of the Express Pipeline project.
- (e) On 29 August, Robert Fournier was appointed Temporary Board Member for the review of the Sable Gas Projects applications.

SENIOR STAFF OF THE BOARD

Gaétan Caron	Executive Director
Brenda Kenny	Business Leader, Applications
John McCarthy	Business Leader, Operations
Terrance Rochefort	Business Leader, Commodities
Scott Richardson	Business Leader, Information Management
Sylvia Farrant	Business Leader, Corporate Services

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